Stress, Causal Attributions, and Coping

A thesis prepared by Jay Mclean to meet the requirements of a Master in Arts in Psychology. 2001

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Acknowledgments

First, I would like to thank my Supervisor Professor Ken Strongman for his help and discernment on all matters. The statistics nevertheless, which are an integral albeit demanding part of any empirical work, were made less problematic thanks to the help of Professor Garth Fletcher. In addition, thankyou to my friends and family who have continually offered support and encouragement. Last, thankyou to my partner Juliette whose confidence and love are at the heart of my work – I love you.

Abstract

The potential differing effects of causal attributions on both stress and coping in response to failing an exam were investigated. A 59 item questionnaire was distributed to 99 male and 90 female students from Canterbury University. The findings show that, as expected, external, stable, and uncontrollable attributions related positively to the self-reported stress level and negatively to the likelihood of seeking social support. In addition, the causal attribution stability moderated the relationship between total stress and seeking social support. Overall, coping was a better predictor of the stress level than the causal attributions. There were also some surprising gender effects. Females believed to more of a greater extent than males that they: 1) would experience more stress; 2) were more likely to seek social support; and 3) would utilise more of a problem-focused strategy. The results are discussed in relation to the importance of the contextual model – the interaction between the situation and the person as an overall determinant of the likely coping strategies and causal ascriptions called forth, notwithstanding that the interaction is extremely influenced by one's cognitive appraisals.

Stress

Stress is ubiquitous. People everywhere are expressing how stressed they are, whether they are at work, at home, or socialising. It would seem that from such chronic usage that stress is a plague and it is capable of destroying peoples' lives, not only because it relates to negative socio-emotional experiences like depression, but because it can be more relentless, possibly leading to death. This last suggestion may appear somewhat extreme, but the physiological toll the body endures from stress is capable of increasing the risk of say, cardiac infarction (Sarafino, 1998). What constitutes the likelihood of being a candidate for stress, in such a harsh sense, is distinguished by a myriad of factors, thereby making any research that is capable of identifying such factors very important. This thesis for example, is concerned with particular cognitive processes that are influencing stress reactions and subsequent coping responses. Consequently, the research entailed in this thesis will provide further support that how people think is indeed, influencing their stress reactions.

This thesis, as mentioned is concerned with stress and some of the cognitive structures that are implicated. In this first chapter, I will define what stress is, provide a brief history of its first application and then move on, emphasising a more recent and widely accepted definition. Implicit in this definition is the process of cognitive appraisal, which is fundamental to stress because it distinguishes between stress cues of threat, harm/loss or challenge. After providing a detailed discussion of cognitive appraisal, I will next look at the emotional reactions as elements of a stressful episode, and then continue, providing a section that differentiates physiological stress from psychological stress. Last, I will discuss how arousal relates to stress, explicating the idea that arousal provides researchers with a physiological measure of stress,

notwithstanding its impact on performance. This chapter however, does not expect to reach all the boundaries of the stress rubric, but provide an overview that captures how cognitions play an important role in the stress process.

What is stress?

The first point is that I am talking in terms of psychological stress. In this regard, the environment and the human (notwithstanding the fact that stress exists for other organisms) are the two "major" factors involved in stress. On the one hand, research may focus on the former – environmental influences – describing stress as a stimulus (Sarafino, 1998). Events or circumstances that a person refers to as causing feelings of tension (e.g., their job) are called stressors. On the other hand, research may focus on human reactions to stressors, treating stress as a response, and has two interrelated components (Sarafino, 1998). First, the psychological component involves emotions, thought patterns, and behaviour (e.g., feeling nervous). Second, the physiological component involves heightened bodily arousal (e.g., dry mouth, heart pounding, and perspiration). The person's psychological and physiological response (biobehavioral response) to a stressor is called strain (Sarafino, 1998).

It is important to note that the physiological and psychological components of stress are interrelated. Making a distinction between the two components is artificial, a practice that is only followed by each discipline (e.g., physiology, endocrinology, psychology, anthropology, and so forth) and according to their own investigative concepts and techniques (Singer & Davidson, 1986). For example, the perspective used in this thesis will be psychological, and concerned with particular cognitions that may be influencing the biobehavioural response of stress. Needless to say, it is understood that other biological components may too be contributing to an

individual's reported stress. However, the idea that stress was indeed a biobehavioural response has not always been clearly stated in the stress literature.

The early use of the term stress derived from the engineering use of the concept, as in stress-producing strain or focused on the physiological reaction of the organism to some outside threat (Singer & Davidson, 1986). Such work tended to focus on stimulus characteristics, attention, vigilance (in signal detection), and performance change (primarily decrement) under unusual input load and environmental conditions (Appley & Trumbull, 1986b). Selye (1936) first formulated a notion that the organism is reactive and little cognition is involved (cited in Singer & Davidson, 1986). He soon however, broadened his model to encompass a wider range of human situations, although the model essentially remained reactive; that is, stress was indicative of physiological and endocrinological changes. Moreover, Hans Selye's (1936, 1946, 1950, 1955 cited in Appley & Trumbull, 1986) influence to the field of stress – the General Adaptation Syndrome (G-A-S) – encouraged clinical and experimental psychologists alike, "to define stress in terms of bodily response and to look for those conditions that would trigger this common, unitary, systematic reaction" (Appley & Trumbull, 1986, p. 5). Defining stress as a unitary or all-or-nothing phenomenon, was however, soon to be recognised as too inflexible due to the fact that "not all events that were presumed to be stressful turn out to be so; that even those that are in some manner demonstrably stressful are not necessarily so- or at least not uniformly so- for all individuals exposed to them; and that even the same individual exposed to the ostensibly same environmental stressor could react and/or be affected differently at different times or under different *sets*"(Appley & Trumbull, 1986, p.6).

In contradistinction to Selye's seminal work, views of stress have evolved such that it is described as a process, incorporating both stressors and strains, and thus adding an important dimension: the relationship between the organism and the environment (Lazarus & Folkman, 1984a, 1984b). Moreover, Lehman (1972) introduced the "transaction model" to establish that the presence or absence of a stress reaction was "a multiplicative function of both situational and individual characteristics" (p. 484). After reviewing the alternatives, Chalmers (1981) concluded that the now widely held view of "the environment - organism transaction approach appears to offer a realistic framework for stress research and theory" (p. 328).

In recent times, there tends to be some agreement as to what is involved in the stress arena (e.g., Appley & Trumbull, 1986; Averill, 1973; Baum, Singer, & Baum, 1981; Cohen & McKay, 1984; Coyne & Holroyd, 1982; Folkman, Lazarus, Dunkel Schetter, DeLongis, & Gruen, 2000; Lazarus, 1966; Lazarus & Folkman, 1984b; Pearlin, Menaghan, Lieberman, & Mullan, 1981; Singer & Davidson, 1986), hence most theorists referring "to any event in which environmental demands, internal demands, or both *tax* or *exceed* the adaptive resources of an individual, social system, or tissue system" (Monat & Lazarus, 1991, p.3). This is a broad definition of stress, thus highlighting the diversity of the stress arena – a diversity that is best explained by Lazarus (1966):

> It seems wise to use "stress" as a generic term for the whole area of problems that includes the stimuli producing stress reactions, the reactions themselves, and the various intervening processes. Thus, we can speak of the field of stress, and mean the physiological, sociological, and psychological phenomena and their respective concepts. It could then include research and theory on group or individual disaster, physiological assault on tissues and the effects of this assault, disturbances or facilitation of adaptive functioning produced by conditions of deprivation, thwarting or the prospects of this, and the field of negatively toned emotions such as fear, anger, depression, despair, hopelessness, and guilt. Stress is not any one of these things; nor is it a

> stimulus, response, or intervening variable, but rather a collective term for an area of study (p. 27).

Where, then, does this leave me with respect to the question of what is stress? This thesis will employ a cognitive-relational definition of stress in which stress is viewed as a relationship between the person and the environment that is cognitively appraised by the individual as personally significant and as taxing or exceeding resources (Lazarus & Folkman, 1984a). Moreover, it is clear that stress is best regarded as a complex rubric, like emotion, motivation, or cognition, rather than as a simple variable (Lazarus & Folkman, 1986). "The meaning sphere of stress is defined by many variables and processes that are reflected in the person's appraisal [cognitive appraisal] of a relationship with the environment as relevant to well-being and taxing or exceeding his or her resources ... Changes in the relationship and how it is appraised by the person explain the flux observed in the short-term emotional reactions and behavior that flow from any person-environment encounter" (Lazarus & Folkman, 1986, p.70). According to this definition, the person is an active agent who can influence the impact of a stressor through, *cognitive*, behavioural, and emotional strategies. As a result, people differ in the amount of strain they experience from the same stressor, and the same person responds differently to the same stressor at different times.

Cognitive Appraisal

What is meant by cognitive appraisal? Appraisal is a key issue in the transactional model, a process through which the individual *continually* evaluates a given person-environment relationship with respect to its significance (primary appraisal) and resources and options for changing the relationship (secondary appraisal) (Folkman & Lazarus, 1991; Lazarus & Folkman, 1984a; Singer &

Davidson, 1991). "Appraisal is about personal meaning, an evaluation of the significance of what is happening for one's well-being" (Lazarus, 1990, p. 15). The meaning and emotional quality of every person-environment encounter is shaped by the convergence of both primary and secondary appraisal (Folkman & Lazarus, 1991). Moreover, the two are highly interrelated and importantly, sometimes a person's secondary appraisal of limited resources, or weakness, can lead to primary appraisals of threat where they would not otherwise occur (Coyne & Holroyd, 1982). The judgmental process of comparing demands to resources demonstrates the subjectivity involved and the dependency on one's evaluation of a situation when making appraisals. Such subjectivity helps account for individual differences in reactions to similar situations (Carpenter, 1992).

Moreover, cognitive appraisal is a virtually continuous, multi-level monitoring process (of appraisal and reappraisal), emphasizing feedback through the entire perception and coping sequence (Appley & Trumbull, 1986a). Notwithstanding the idea that the appraisal process is broken down into two stages (an appraisal of the demand and an appraisal of one's competence to meet the demand), Appley (1986) conceived that at each step, the result(s) of appraisal and/or action would possibly alter the nature of the challenge or threat and of the ensuing coping requirement. In other words, a person continually monitors a demand, perhaps seeking new information, or taking action – doing anything that may possibly lead to the demand being reduced to an ostensibly manageable state. Allowing for new information or a shift in one's beliefs about the situation makes it easier to explain how the stress response may change over time (Carpenter, 1992).

Appraising Events as Stressful

Stressful appraisals include appraisals of harm/loss, threat, and challenge. Harm/loss refers to the amount of damage that has already occurred, as in harm to or loss of a job, a friendship, or self-esteem. A small amount of damage could be thought of as a "disaster," thereby exaggerating its personal impact and increasing the feeling of stress (Ellis, 1987). Threat refers to the expectation of future harm or loss – for example, when there is uncertainty about the outcome of a test. Stress appraisals seem to depend heavily on harm-loss and threat (Hobfoll, 1986). Challenge, on the other hand, refers to an opportunity for growth, mastery, or gain by using more than routine resources to meet a demand. For instance, a job promotion might be viewed as stressful by a worker, but also as an opportunity to gain new skills and make more money. "The intensity of an appraisal of harm/loss, threat, or challenge depends on the relationship between the personal significance of the goal, commitment, or value that has been harmed, threatened, or challenged and the adequacy of the person's resources for managing the harm/loss, threat, or challenge" (Folkman, Chesney, Mchusick, Ironson, & Coates, 1991, p. 241).

Appraising events as stressful depends on two types of factors – those that relate to the person and those that relate to the situation (Cohen & Lazarus, 1983; Lazarus & Folkman, 1984a). Personal factors include intellectual, motivational, and personality characteristics. People with high self-esteem for example, may perceive a stressful event as a challenge as opposed to a threat, believing they have the resources to meet demands with the strengths they possess (Cohen & Lazarus, 1983). Another example is linked to motivation: the more significant a threatened goal, then the more stress is

likely to be perceived (Paterson & Neufield, 1987). Irrational beliefs stemming from a person's belief system can also increase stress. Ellis (1987) notes:

> "Because I strongly desire to have a safe, comfortable, and satisfying life, the conditions under which I live *absolutely must* be easy, convenient and gratifying (and it is *awful* and I *can't bear it* and *can't be happy at all* when they are unsafe and frustrating)!" (p.373).

A person who has such a belief is likely to appraise virtually any sort of inconvenience as harmful or threatening.

What is it about situations that make them stressful? First, events that involve very strong demands and are forthcoming tend to be seen as stressful – an exam for example (Cohen & Lazarus, 1983; Paterson & Neufield, 1987). Moreover, the timing of a life transition can affect the stress it produces. People have expectations as to when some events, such as marriage or retirement should occur and any deviation from the expectation may be considered a loss. In addition, ambiguity – a lack of clarity in a situation – can also have an effect on stress appraisals (Quick & Quick, 1984). Desirability of the situation is another factor that influences stress appraisals; generally, undesirable events are more likely to be appraised as more stressful than are desirable ones (Sarafino, 1998). Many aspects of the situation may influence the appraisal of stress; however, an important aspect for this thesis is controllability – a factor that will be discussed more fully in the next chapter.

So far I have discussed a very small portion of what is now included under the rubric "stress" despite the fact that "the range of issues normally encompassed by single investigations is too truncated to observe the extended web of relationships that gives shape and substance to the [stress] process" (Pearlin, et al., 1981, p.337). Remember, however, that this thesis is concerned with psychological stress, although,

simultaneous and successive biological, interpersonal, and social cultural levels may be interdependent.

In any case, it has been argued by Lazarus (1967) that the cognitive processes of appraisal and coping are crucial to psychological stress reactions. In other words, a person must appraise a future condition as harmful or threatening in order to feel stressed. Studies have illustrated the crucial role of appraisal in the production and reduction of threat and stress reactions. For example, Speisman, Lazarus, Mordkoff, and Davison, (1964) permit the conclusion that the same visual stimulus varies in the amount of stress produced depending upon the nature of the cognitive appraisal the person makes regarding its significance for him or her. Likewise, Lazarus, et al. (1965) test the generality of the principle that manipulation of beliefs about events can short-circuit threat; that is, a person can alter the cognitive process of appraisal so as to diminish or eliminate the stress response to a stimulus which otherwise would be threatening. Although not all their results were statistically significant, the direction of results was invariant, thus suggesting that the cognitive appraisal of the significance of what is apprehended is crucial in determining the emotional reaction to a stimulus. The point is that appraisals or one's beliefs about the situation underlie the production of threat. Hamlet's remark offers a poetic summation, "...for there is nothing either good or bad, but thinking makes it so" (Hamlet, Act II, Scene 2).

Emotional reactions as elements of stressful episodes

Emotions are a crucial part of stressful episodes (Perrez & Reicherts, 1992). It has already been mentioned that both primary and secondary appraisal shape the emotional quality and intensity of any stressful encounter, thus suggesting that appraisals can be analysed as antecedent conditions of emotional reactions.

Alternatively, emotions can be conceptualised as a consequence or outcome of efforts of regulation (Folkman & Lazarus, 1988a). According to some prominent conceptions, if automated processes of emotional regulation fail to reinstall homeostasis, then stress and stress-related emotions emerge (Frijda, 1986; Leventhal & Scherer, 1987). Despite such prominent conceptions, simply, it is clear that a basic emotion like fear could result from a primary appraisal of threat. So, in the first instance of a stressful encounter, an emotional reaction has occurred, whether it was the result of conscious or unconscious efforts and the emotion is typically how stressful encounters are described (i.e., I am feeling stressed).

The emotions that are common to stress tend to be negatively toned. Anxious, anger, depressed, helpless, and arguably 'stressed' are typical examples of emotional states that characterise a stressful encounter. Such emotions would characterise the course of a stressful episode, although, it will be discussed in the next chapter that as the situations unfolds, emotions can change, especially if coping is palliative. The change in emotion is obvious in a baby that is given some eye drops for say, conjunctivitis. At first, the drops are stressful due to their apparent cold, threatening and unpredictable nature. Needless to say, the baby does not cry forever - with some comfort and reassurance it soon settles to a calmer state. Given this state of affairs, seemingly the baby is stressed at first and then returns to a level of homeostasis when the threat is ameliorated, that is the eye drops warm and sooth the eyes and/or the caregiver provides the baby with a safe haven.

I use the example of a baby to demonstrate that stress and its expressions are there from an early age. Indeed, as people grow older or learn from past experiences, their expressions and the antecedents to stress can become more complex due to

developing cognitive processes whereby stress is not only a physiological reaction (the cold drops on the eyes), but may result from psychologically mediated mechanisms – the presentation of the eye drop bottle.

Psychological versus physiological stress

In brief, I previously tried to draw a distinction between psychological stress and physiological stress – the later being more attuned to Hans Selye's seminal work on bodily responses. To elaborate, "physiological stress has to do with the visceral and neuro-humoral reactions of a person or animal to noxious stimulus agents and the physiological mechanisms that account for it" (Lazarus, 1967, p. 162). Further contributions by Hans Selye have shown that tissue systems are constructed with certain *non-specific* defenses against the disturbances produced by noxious stimuli. Moreover, long-term exposure to many different noxious agents on animals (these animals had no power to alter the aggravating or harmful circumstances – not real world experiences) always tended to bring about three morphological changes, namely (i) hypertophy of the adrenal cortices, (ii) atrophy of the thymus, and (iii) gastric ulceration (King, Stanley, & Burrows, 1987). Attention has mainly focused towards the adrenocortical system in studies with humans, which has proven to provide a convenient measure of acute reactions to the environment (King, et al., 1987). It is worthwhile noting, however, that different 'stressors' are capable of producing a different profile of responses in the body chemistry system – conspicuously, *stressor-specific* responses (King, et al., 1987).

A physiological stress response can be produced by a noxious stimulus, whether the stimulus affects the person physically or psychologically. Noxious in the physiological sense is any condition that is disturbing or injurious to tissue structure

or function. For example, a sharp knife run across the skin would produce a wound, setting into motion the defensive processes that protect the system and restore the homeostatic steady state (Lazarus, 1967). If the knife was blunt however, a wound may not be produced, thus, in this case, the knife is not noxious in the physiological sense. In the psychological sense, the knife still may be noxious, that is, the mere expectation of what the knife could do to the skin may produce a stress reaction both psychologically and physiologically. The harm need not have actually occurred; it may only be anticipated. Herein lies the difference between a physiological and psychological stress response – "there must be an actual confrontation of the tissues by a noxious stimulus, and sufficient tissue reaction must be produced to serve as a signal for the activation of homeostatic mechanisms" (Lazarus, 1967, p. 162) prior to a physiological stress response, unlike a psychological stress response which only requires anticipation. In other words, the sequence of antecedent processes is quite different even though the appraisal of threat and physiological assaults appear eventually to produce similar responses.

Arousal and stress – stress and performance

Arousal is a term that often appears in the stress literature. King et al. (1987) consider the distinction between stress and arousal to be one of the most common sources of confusion in stress research; therefore, arousal warrants some attention here. Arousal generally refers to "a dimension of activity or readiness for activity based on the level of sensory excitability, glandular and hormonal levels and muscular readiness" (Reber, 1995, p. 54). Arousal is on a quantifiable continuum, at one end is sleep and at the other end is alertness (King, et al., 1987). Arousal is also common to the emotion literature, however, emotion has many qualitative continua that arousal

does not best explain (King, et al., 1987; Lazarus, 1966). Arousal is a measure that enables a dimension for empirical investigation when a researcher is observing for whatever reason, a person's psychological reaction to an environmental stimulus. Arousal, according to those who study the processing of information, "generally means the quantity of attentional resources which are (or may be) allocated to the current task" (King, et al., 1987, p.6). Arousal would be better understood as the positive aspect of the human response to a demand (Sanders, 1983).

The difference between arousal and stress is that "arousal appears to relate to the marshalling of resources to enable one to cope whereas stress is a negative emotion strongly associated with doubts about coping" (King, et al., 1987, p.6). In other words, heightened stress could lead to either a decrease or an increase in arousal, which in turn and all things being equal, can detract from performance (Sanders, 1983). The point is that, generally, stress and arousal are negatively correlated (correlation coefficient approximately equal to – 0.2). I say "generally" because there is a group of people that King, et al. (1987) refer to as 'giants' who tend to increase in both arousal and performance under high levels of stress. Such exceptions are relatively rare – on average, stress usually reduces performance. Although there is a relationship between performance, stress and arousal, I need to highlight the point that arousal is independent of stress; arousal does change because of stress; arousal is a necessary part of emotion or mood state (Mackay, Cox, Burrows, & Lazzerini, 1978). As a result, it seems fair to say that both stress and arousal should be measured before it is possible to predict likely effects of either upon performance (King, et al., 1987).

Summary

According to Lazarus (1966), there are three central issues in psychological stress: (1) What are the conditions and processes that determine when stress reactions will be produced and when they will not? For example, how does a person differentiate between benign conditions and damaging conditions? (2) What happens when a stimulus is reacted to as stressful? For example, how does the individual cope with stress and what factors influence the choice of coping process? (3) What are the patterns of reaction that define the presence of stress? It has been discussed that the reaction varies within and between the person; therefore, the issue is concerned with ascertaining what accounts for the variations. The focus of this thesis is concerned with the last issue, specifically, how the variations in stress response are related to intervening processes – namely, coping styles and attributions.

Psychological-stress analysis as I present it in this thesis is distinguished from other types of stress analysis by the intervening variable of threat. The cognitive process of appraisal is crucial to the psychological stress response inasmuch as cues are evaluated or appraised for their potential harm or benefit. Such appraisals are influenced by features in the stimulus condition configuration (e.g., degree of ambiguity, imminence of the harmful confrontation) and/or secondary appraisals of coping resources available to meet the demand. For the most part, an individual's psychological structure – general beliefs about the environment and one's resources for dealing with it will determine the psychological stress response.

The next part of this thesis is to move forward and investigate some variables that, in part, define the psychological structure, namely attributions and coping processes, and ascertain if they have any bearing on anticipated stress levels. Of

course, coping processes are part of the psychological stress response; however, this thesis is concerned with the moderating effects of attributions on coping styles and the stress response. Moreover, does a particular coping strategy vary the stress level in a same stress situation? Before these questions can be investigated, I will first discuss both coping and attributions.

Coping

The transition from stress to coping requires only a small step insofar as coping is connected to stress. "Both lay and scientific perspectives on coping typically highlight efforts of the individual or system to better respond to stress" (Carpenter, 1992, p. 1). In other words, coping is how a person deals with stress – what behaviours or cognitions are, perhaps, subsequent to a stressor reflects what may be considered 'coping.' This is not to say, however, that coping is about successful outcomes or alleviating the stress; a mere coping effort, activity or behaviour in response to a demand suffices to characterise coping. In addition, by saying that coping occurs only when one is *experiencing* stress provides some problems. First, the definition of coping relies heavily on how stress is defined, which in itself has much debate. Second, people can learn to avoid stressors so they do *not* actually experience stress, yet they are still responding to a threat. So the question then becomes, what is coping?

The purpose of this chapter is therefore, to investigate the above question. In addition, I will provide a transitory view of the relations between coping processes, threat and stress reactions, and secondary appraisal. Next, I will discuss two types of coping – problem- and emotion-focused. Despite the popular trend of the coping literature to refer only to the two aforementioned types, in addition I will discuss a third, and arguably distinct type of coping, namely seeking social support. Focusing on a cognitive relational view of both coping and stress, effective coping does not relate to successful outcomes; consequently, what is considered effective coping will be discussed in more depth, thus leading into further discussion on changeability and controllability. Although it is argued that coping is deployed in response to a *specific*

stressor, it is possible to expect that people will develop coping styles – this will be further elaborated before I examine coping as a mediator of emotion. Because this thesis is empirical, I have also included a section that centers on the measures of coping and distinguishes between attentional and coping processes. Last, I will briefly deliberate how coping develops over the life span, insinuating that people adopt more emotional type strategies as they grow older. But first, back to the main question - what is coping?

What is coping?

Over the course of discussing stress, I focused on a cognitive-relational definition, emphasising characteristics of both the person and the situation in defining sources of stress and highlighting the appraisal process, which can ameliorate the stressful person-situation relationship. As mentioned, coping is also part of this stress process inasmuch as it refers to "changing cognitive and behavioural efforts to manage specific demands that are appraised as taxing or exceeding the resources of the person (Lazarus & Folkman, 1984). The picture that emerges here is that coping, when referring to psychological stress theory, is a strategy that is employed to deal with threat rather than those being seen as synonymous with problem solving (Lazarus, 1966).

The above definition offered by Lazarus and Folkman (1984) contains three important features: First, coping is *process-oriented.* Coping refers to what the person actually does or thinks, which can change as the situation unfolds. In contradistinction, structural, trait-oriented approaches refer to what the person usually does, would do, or should do. Second, the definition is contextual; it refers to what the person does or thinks within a specific context. This is important because one may

often hear a person mention that they are stressed from their job, thus making it difficult to identify what they are specifically coping with due to the generality of their comment. In other words, if a person were to say they were stressed because of the extra workload, then we could specifically identify how they were coping with the extra demand. Third, coping is defined without reference to its outcome; it refers to efforts to manage and not the success of these efforts. Coming to terms with situations or conditions that are beyond one's control is instrumental to effective coping - mastering the situation is not always an option (Folkman, et al., 1991; Lazarus, 1966).

Relations between Coping Processes, Threat and Stress Reactions, and Secondary Appraisal.

The basic assumption of Psychological stress theory is that any stress reaction is a response to threat. Implicit in this argument is the idea that "observable threat and stress reactions are reflections or consequences of coping processes intended to reduce threat" (Lazarus, 1966, p. 152). Lazarus (1966) further argues that these action tendencies resulting from the appraisal of threat is an effort on the part of the individual to cope with the harmful condition by reducing or eliminating the anticipated harm. This functional process is determined by secondary appraisal, which in itself is a cognitive process. The point is that "not only does cognitive activity (as primary appraisal) underlie threat, but it also (as secondary appraisal) intervenes between threat and the coping process" (Lazarus, 1966, p. 155). Without such an intervening process, it would be difficult to explain the variations in both the coping strategies and stress reactions that are seen within and between each person even though stressors may be ostensibly the same.

Secondary appraisal may be described as an evaluation of the options for coping. A person may ask, for example, "What can I do?", after they have evaluated an encounter for its personal significance (primary appraisal). If no options become apparent; that is, the demands appear to exceed the individual's available coping resources, then the situation will be appraised as stressful. Laboratory studies have shown that the way an event is appraised indeed influences the subsequent coping strategy that is selected (Averill, O'Brien, & De Witt, 1977; Folkins, 1970; Monat, Averill, & Lazarus, 1972).

Moreover, the resources that are available for coping may influence the coping process. Coping resources may include, for example, skills and abilities (e.g., analytic skills, mechanical ability), social resources (people from whom one can obtain tangible, emotional, and information support), physical resources (e.g., health), tangible resources (e.g., money with which to purchase goods and services), psychological resources (control expectancies, morale, and self-efficacy beliefs), and institutional, cultural, and political resources (e.g., help groups and laws) (Folkman, et al., 1991).

Appraisal and coping continually influence each other in that an appraisal of a situation as stressful motivates coping effort. As the person "copes," the situation changes or unfolds, which may lead to reappraisal. This continuous, bi-directional relationship between the person and the environment – each affecting and being affected by the other, is part and parcel of the transactional approach. The goal for the person, who is coping per se, is to return to an inner equilibrium or re-establish homeostasis by alleviating any discomfort caused by the stressor.

Two types of coping

According to Folkman et al. (1991), coping serves two major functions: regulating distressing emotions (emotion focused coping) and changing the problem that is causing the discomfort (problem focused coping). A third function is offered by Pearlin and Aneshensel (1986), namely, the adaptation of the circumstance giving rise to stress. Nevertheless, generally, situations in which the demands are appraised as amenable to resolution or change call for problem-focused forms of coping, whereas demands that are appraised as not changeable call for emotion-focused forms of coping. Problem-solving efforts are more likely to be used when individuals perceive that they have more control, power, or responsibility over the situation. Conversely, emotional strategies that can alter the meaning of the situation or the individual's emotional state are used when situations are perceived as uncontrollable (Folkman & Lazarus, 1990). Figure 1 shows the coping and appraisal processes and how the two are inter-related.

A problem-focused form of coping includes behaviours or acts that attempt to alter or manage the problem. Cognitive problem solving and decision making, information gathering, and goal setting as well as problem-oriented behaviours such as joining a health club or dieting are some examples of problem-focused coping. Emotion-focused forms of coping are mental strategies that regulate emotion or alter the meaning of a situation, without changing the environment. For example, some emotion-focused techniques are cognitive reframing, minimization, distancing, denial, and escapism with drugs and/or alcohol. Such strategies are apt to be mainly palliative in the sense that they do not actually alter the threatening or damaging conditions but make the person feel better. Despite the distinct classification of these two strategies,

complex combinations of problem- and emotion-focused methods are used to cope with stress (Folkman, 1992; Lazarus & Folkman, 1991; Monat & Lazarus, 1991).

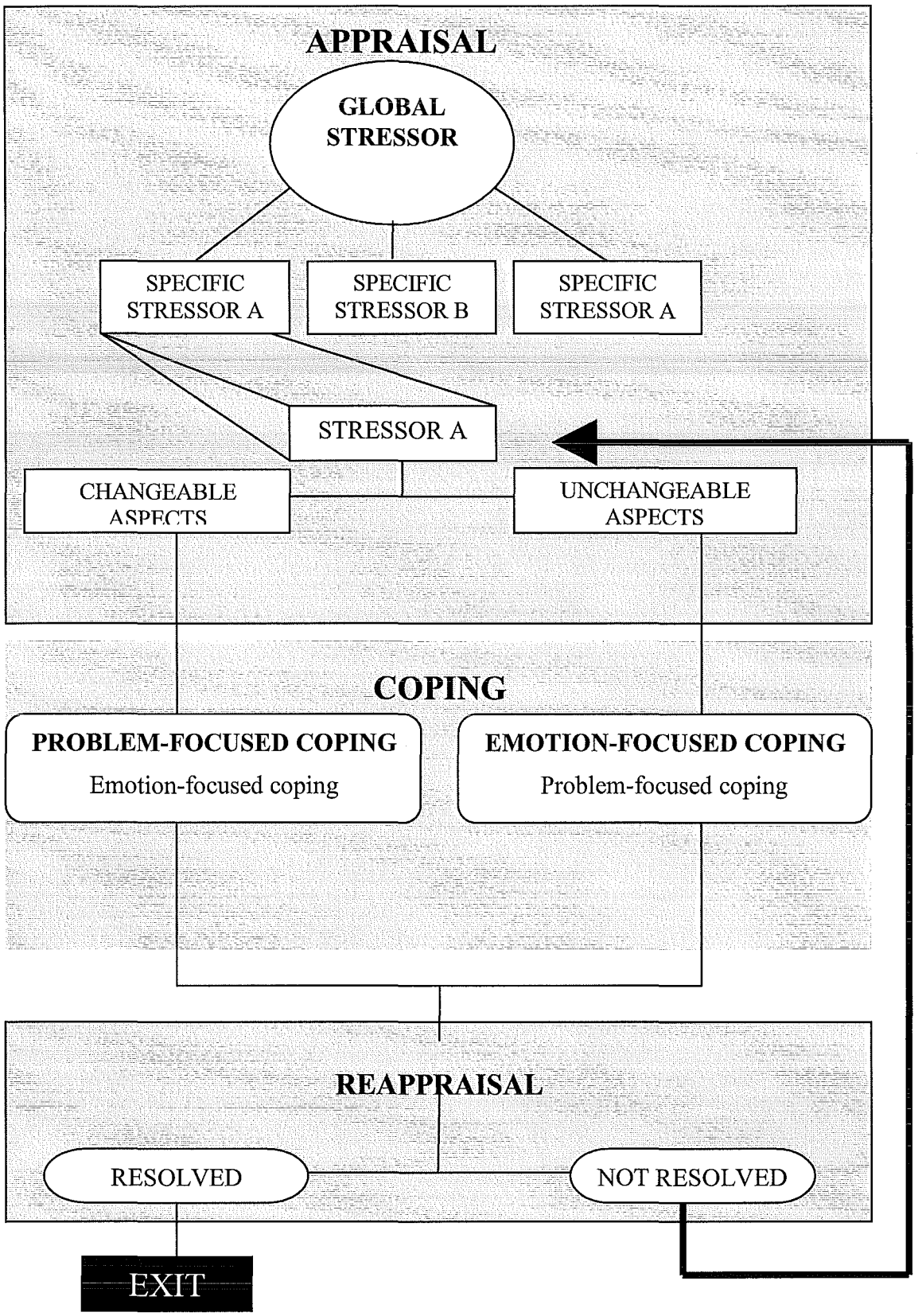

Figure 1. Appraisal and coping model (Folkman, et al. 1991, p. 246).

Seeking Social Support

When considering how an infant ideally seeks its caregiver in times of need or distress, it is easily recognised that there is a fundamental strategy that is primordial to say the least, namely seeking social support. Such a strategy makes sense in light of the voluminous literature documenting the benefits of social support, which cannot be comfortably placed in either problem- or emotion focused categories of coping (Amirkhan, 1998). The reason is that support is sometimes sought for information and advice, sometimes for understanding and sympathy, and sometimes for other reasons altogether.

Folkman, et al. (1991) categorised seeking social support as problem solving, which means that by doing so, it could be expected that the person is attempting to change the person-environment situation. If a person was to say, seek sympathy from a close friend, this may not be an attempt to physically alter the problem, but more of an emotional strategy to make themselves feel better, without actually changing the environment. This is especially true if the problem happens to be the death of a loved one – a person has no controllability over the stressor nor can they change the outcome – the best strategy would be an emotional strategy or maybe to seek social support. The point is, a new taxonomy composed of all three categories – Problem Solving, Emotion Focused, and Support Seeking needs to be considered, distinguishing the latter from the other two.

However, it is arguable that seeking social support clearly involves one of the other two strategies. That is, a person could seek support for sympathetic reasons or to ask a friend to help them alter the person-environment situation. Therefore, what distinguishes social support from the other two coping strategies is the inclusion of a

third party, a person who offers either emotional support or help with solving the problem. So despite its overlap with the main coping strategies, social support is nevertheless a valuable resource that does not have to be reduced to simple structure pertaining to emotion- or problem-focused coping, but recognised as a distinct coping strategy because it involves a social component that could be mutually exclusive in the other two strategies.

Effective coping

It was previously mentioned that effective coping is not defined in relation to its outcome. However, this depends on the choice of the underlying theoretical model. For example, in the animal model, effective coping is equivalent to performing adaptive tasks successfully (Folkman, 1991; Lazarus & Folkman, 1984a). The main theme of this thesis is on the contextual model, emphasising the relationship between the person and the environment in a specific context. For obvious reasons, this leads to a contextual definition of coping effectiveness. Such a definition centres on two types of fit: the fit between the reality and appraisal and the fit between appraisal and coping (Folkman, et al., 1991).

"The fit between reality and appraisal refers to the match between what is actually going on in the person-environment transaction and the person's appraisal of that transaction (Folkman et al., 1991, p. 246). Maladaptive coping can result when a person seriously deviates from veridical appraisals. For example, on the one hand, a person appraising a harmful stimulus as benign may result in the person failing to put in place anticipatory coping mechanisms. On the other hand, a person appraising a benign situation as threatening can lead to unnecessary coping, thus deflecting their attention from other more pressing tasks. Then again, people can be realistic with their

appraisals of what is happening, but unrealistically appraise what resources or personal skills are available for coping with the demands. Being pessimistic about the available resources for example, could result in restricted coping efforts, whereas an overly optimistic appraisal of resources could be detrimental to the outcome (Folkman et al. 1991).

Changeability

One factor that seems to be underpinning the choice of coping response is whether the person appraises the demands as either changeable or not changeable. In other words, in situations in which there is a potential for changing the outcome, it is appropriate to rely more on problem-focused coping as opposed to emotion-focused coping, which alternatively, is more appropriate for situations unamenable to change. Not recognising situations that can be changed or not changed, thus having a poor fit between situational appraisals of changeability and actual coping processes, should decrease the possibility for the management or reduction of distress and/or lead to situations not resulting in desired outcomes (Folkman et al. 1991). For example, Katz, Weiner, Gallagher, & Hellman, (1970) found that women awaiting breast tumor biopsy were more inclined to adopt emotion-focused strategies (e.g., displacement, projection, denial, hope and prayer), which ultimately, did not bring about the desired change. In effect, employing emotion-focused strategies like defensive behaviours (such as denial that a suspicious lump in the breast might be cancerous) have actually endangered the lives of individuals (e.g., Katz, et al. 1970). This is not to say that emotion-focused strategies like denial or other defensive behaviours are always maladaptive. Such emotion-focused modes of coping may be extremely useful in helping a person maintain a sense of well-being, integration, or hope under conditions

(e.g., such as situations where the person would be otherwise overwhelmed by the unpleasant reality, where the likelihood of threats occurring is small, where there is nothing the individual can do to prepare for the potential threatening event, or where a hopeful attitude prevents feelings of giving up) otherwise likely to encourage psychological disintegration (Cohen & Lazarus, 1983).

Changeability is also discussed by Perrez and Reicherts (1992), who use a situation-behaviour approach to stress and coping. They define changeability, as "the probability that the situation will change by itself; that is via its own dynamics (e.g. the weather)" (p. 19). Changeability is an objective characteristic of the situation. The subjective appraisal that is of most concern when referring to changeability is whether the subject recognises the objective changeability; that is, that the situation will change by its own dynamics, without the subject's contribution. If the situation will change on its own accord, like the weather, then perhaps an emotion-focused strategy is more appropriate; the person need not apply a problem-focused strategy. For example, attempting to change the weather by sprinkling fairy dust, may be a wasted effort, which could result in the person becoming more frustrated and may in fact increase levels of distress because they did not achieve the desired outcome (e.g., Cohen, Evans, Stolols, & Krantz, 1986). This is not to say that person could not move to a place where it is perhaps warmer (problem focused strategy) – indeed, this would be a fitting response if they wished to do something about the weather. The point is that it is considered adaptive if a person responds in a manner that *reflects* the changeability of the situation.

Controllability

Whether a person appraises a situation as changeable or unchangeable is influenced by many factors. These factors, broadly speaking, could be categorised as physical, emotional, cognitive, social, and/or situational. No one factor is mutually exclusive however, they all operate in unison characterising the demand, thus influencing coping. In a sense, this relates back to the aforementioned idea that stress is a rubric as opposed to a variable because many variables and processes are reflected in the person's appraisal of a relationship with the environment. One important factor for this thesis that falls under "situational" is controllability – namely, "controllability of a situation" (e.g., Miller, 1979; Monat et al., 1972). Being able to distinguish whether facets of the demand are within one's controllability will influence the amount of stress that one experiences.

Controllability as an objective dimension of a situation refers to "the inherent opportunities for control within a situation" and as a subjective dimension, it is "the subjective appraisal of personal ability to control [have a positive influence on] the stressful situation" (Perrez & Reicherts, 1992, p. 26). Notwithstanding the fact that objective controllability would help ascertain a goodness of fit between coping strategies and the demand, a person's appraisal or their subjective alibility to control the situation would be influencing the coping response. If there is low changeability in a situation for example (e.g., not able to change by its own dynamics), then arguably, control behaviour will probably be elicited. What Perrez and Reicherts mean by control behaviour is not all that clear (I suspect that problem-solving behaviour that elicits a positive outcome is relevant), but reactions of helplessness and hopelessness are associated with poor control (e.g., Rosellini & Seligman, 1976). Moreover, control

may be elicited through mental strategies – for example, research conducted by Brandtstadter & Renner (1990) revealed a gradual shift from an assimilative to an accommodative mode of coping in older people; older people utilised their cognitive prowess as opposed to their brawn. Control is not always about physically tackling the situation, it can also involve a mental strategy that changes the meaning of the situation – namely, emotion-focused coping.

"The fit between appraisal and coping refers to the fit between situational appraisals of controllability (secondary appraisal) and actual coping processes (Folkman, 1992, p. 42). It has already been discussed that problem-focused coping is more appropriate in situations that are amenable to change; that is, "in encounters that hold the potential for personal control, whether over the outcome of the particular encounter or its recurrence in the future" (Folkman, 1992, p. 42). Likewise, emotion-focused coping is appropriate in encounters where there is little the individual can do to control the outcome or recurrence of the stressor. In other words, the effectiveness of coping strategies intended to change a stressful situation and those intended to regulate distressing emotions during a stressful encounter vary as a function of the perceived controllability of the stressor (Compas, Malcarne, & Fondacaro, 1988a; Forsythe & Compas, 1987). Let us not forget however, that the issue is more complicated than the prescription suggests inasmuch as there is interplay between both forms of coping. An emotion-focused strategy like denial for example, could be utilised in reducing any immediate anxiety that is inhibiting a person from concentrating on the problem at hand – say, taking a test. The expected patterns of coping should include both major coping functions, but the secondary appraisals of control should differentiate the relative amounts of problem- and emotion-focused forms of coping that are utilised (Folkman & Lazarus, 1980).

What is it about control that makes it so pertinent to coping or stress in general? To answer this question, I turn to the research on happiness, life satisfaction, positive mental health, and depression, which all support the claim that the belief that one's actions can produce desired outcomes is essential to emotional well-being (DeCharms, 1972; Seligman, 1975). The underlying theme is the belief that a contingency exists between personal agency and desired outcome (Rotter, 1966). For stress reduction, control may either provide better predictability, thereby allowing for the preparation of defensive mechanisms to combat stress and provide better outcomes (e.g., Seligman, 1968, safety signal hypothesis) or because having control ensures that the situation will not become intolerable (e.g., Miller, 1979a, minimax hypothesis). Although much of this early investigation was completed on rats, more recent research has led to similar findings on perceptions of control as individuals undergo naturally occurring stressful events, such as surgery, chronic illness, or bereavement. Some research supports the idea that perceptions of control contribute to adaptive coping with life stressors (e.g., Affleck, Tennen, & Gershman, 1985; Baum, Fleming, & Singer, 1983; Stroebe, Stroebe, & Domittner, 1988; Taylor, Lichtman, & Wood, 1984; Thompson, Bundek, & Sobolew Shubin, 1990; Thompson, Sobolew Shubin, Graham, & Janigian, 1989; Worchel, Copeland, & Barker, 1987).

The basic idea is that control leads to better outcomes. Control over what? Control over the environment, control over other peoples' behaviour, control over our emotions, or control over our thinking? Which one of these is it? According to Thompson (1981), four types of control – behavioural, cognitive, information, and retrospective – relate to reactions to aversive stimuli. Behavioural control, in the stress context, is having a behavioural response that can affect the aversive event, which lessens or prevents anxiety and anticipatory physiological arousal. Cognitive control

is believing that one has a cognitive strategy that can mitigate the aversiveness of an event by lessoning anticipatory anxiety, reducing the impact of the stimulus, and improves the postevent effects. Informational control can take one of four forms: a warning signal; information about the sensations they will experience; information about the procedures they are about to undergo; or information about the causes of an event. Such information however, according to Miller (1989), will not always reduce the aversiveness of an event, especially if people are high self-monitors (i.e., those who typically shape their behaviours to project the impression they think their current audience or situation demands, unlike low self-monitors, who behave in ways that express their internal attitudes and dispositions). Last, retrospective control refers to the attribution of responsibility for past events, basically assuming that attributing responsibility to oneself is a way of asserting control and preserving one's sense of personal control; that is, seeing oneself as causing the event is one way of making sense out of it. "This is not the only way in which meaning can be assigned to an event, and it is probably the meaning, not necessarily the sense of control, that is important" (Thompson, 1981, p. 96). In its most broadest sense, "control" for this thesis refers to the belief that one has at one's disposal a response that can influence the aversiveness of an event.

Dispositions

So far, I have focused on the contextual aspects of coping, highlighting what the person actually thinks or does in a stressful encounter, and distinguishing some of the characteristics that are inherent in the transaction (e.g., changeability and control). However, recognising that there is a double involvement between the person and the environment, then I need to consider what the individual brings to the transaction,

insofar as a person is equipped with a plethora of experience (unless of course they are a baby) from past encounters where they have had the chance to develop, for example, a sense of self efficacy. What I am referring to here is the dispositional characteristics that are inherent in the person and are influencing their appraisals. Notably, some authors object to trait or dispositional concepts because of their low predictive value and suggest that they fail to capture the changing nature of the coping process (e.g., Lazarus and Folkman, 1984). The debate surrounding the trait versus situation-specific behaviour is not of concern for this thesis. Nevertheless, I will say that when developing intervention programs for the prevention of undesirable outcomes, then seemingly, information about people (e.g., dispositions) would be critical to predict actual behaviour and outcomes (Krohne, 1986).

Dispositional characteristics provide people with a stable, consistent pattern of behaviour across a range of circumstances. For example, if a person were considered to be efficacious, then we could expect such a person to remain persistent or task oriented in the face of pressuring situational demands and their responses generated from positive or negative affect when exercising control over stressors would be different to those who doubt their self-efficacy (Bandura, 1982, 1995). The point is, "the effects of situational manipulations can, in part, be reconciled by considering dispositional preferences for information, coping, and control" (Miller, 1992, p. 79).

Implicated in the notion of dispositional preferences is the idea of coping styles. Coping styles reflect consistencies in the strategies used by individuals over time in a single stressful episode and/or across different stressors. These are not the same as personality traits however, as styles may reflect preferred ways of coping under certain circumstances rather than a consistent style independent of situational

demands (Compas, Malcarne, & Banez, 1992). Despite the distinction between personality traits and coping styles, there is evidence that some personality dimensions – neuroticism, extraversion, and openness to experience – are systematically related to coping strategies (McCrae & Costa, 1986). Some individuals may repeatedly use the same strategy, nevertheless, others may vary their coping with the demands of the situation, thus suggesting a variation in the degree of consistency that individuals display (Compas, Forsythe, & Wagner, 1988b). As a result, unidimensional measures like coping-trait measures (usually depicted along an approach-avoidance continuum) are poor predictors of how a person copes inasmuch as coping has been shown to be a multidimensional phenomenon (Aldwin & Revenson, 1987; Billings & Moos, 1984; Carver, Scheier, & Weintraub, 1989; Felton, Revenson, & Hinrichsen, 1984; Folkman, Lazarus, Dunkel_Schetter, DeLongis, & Gruen, 1986; McCrae, 1982; Stone & Neale, 1984) In essence, trait-measures are generally inadequate with respect to describing the complexity and richness of actual coping processes (Carpenter, 1992).

Coping as a Mediator of Emotion

When exploring the relationship between coping and emotion, Folkman and Lazarus (1988) argue that coping is a mediator of emotion. Coping, in other words, affects emotional responses that tend to accompany stress. "Emotions depend on cognitive appraisals of the significance of the person-environment relationship for the individual's well-being and the available options for coping" (Folkman & Lazarus, 1988a, p. 466). Further, the relationship between emotion and coping in a stressful encounter is bi-directional, with each affecting the other.

In the first instance, a transaction is appraised as harmful, beneficial, threatening, or challenging. The appraisal process generates emotion, which, along with the appraisal influences the coping processes and changes the person-environment relationship. A reappraisal of the altered person-environment occurs and leads to a change in emotion quality and intensity. Coping in this view, is a *mediator* of the emotional response (see Figure 2). Folkman and Lazarus (1988) demonstrated this process in that coping was associated with changes in four types of emotions – disgust and anger, pleasure and happiness, confidence, and worry and fear.

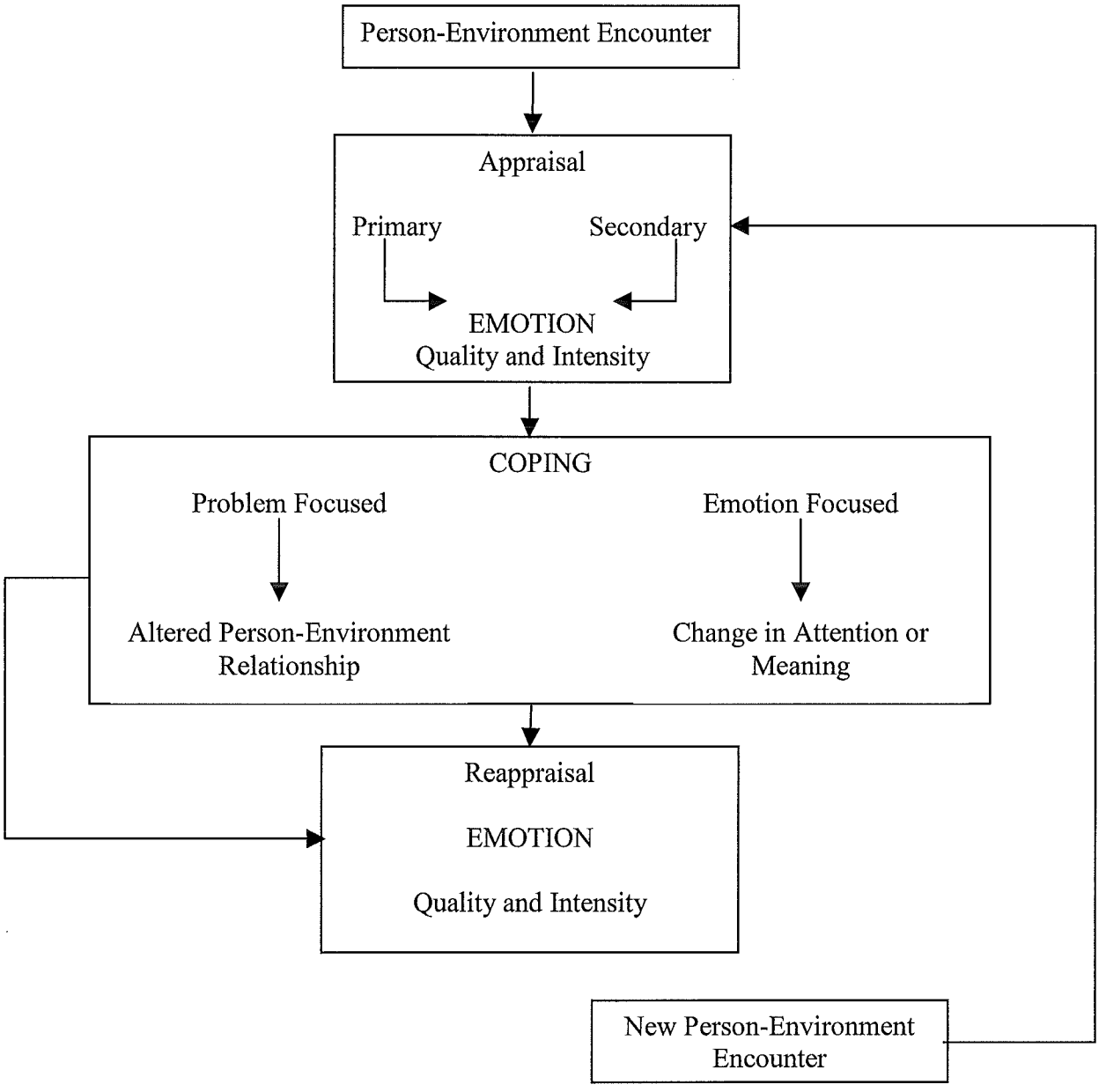

Figure 2. Coping as a mediator of emotion (Folkman & Lazarus, 1988).

Measuring Coping

I have already provided a clue as to how coping is generally assessed. Specifically, I am referring to Lazarus's model of coping, which looks at stress from a process vantage point (remembering that coping is a process in relation to a stress response). Such practices are concerned with what the person thinks or actually does to cope, unlike the trait measures that are mainly concerned with what people would or should do. Due to the unfolding nature of the coping process, the cognitive structures and behaviours that people *actually* employ in stressful circumstances are of consequence.

Moreover, early practices relied on clinicians inferring the underlying cognitive structures utilised by those coping, unlike self-report questionnaires, which objectively quantified peoples' coping thoughts and actions and have been successful since the end of the 1970s (Folkman & Lazarus, 1980; Billings & Moos, 1981; Pearlin & Schooler, 1978). The most popular of these questionnaires is Folkman and Lazarus's (1980, 1988b) Ways of Coping Inventory (WCI) and literally hundreds of scientific reports have used it. Revised scales of the WCI have divided coping strategies into six core dimensions of coping: focus on coping (also labelled problem-solving, information seeking, and instrumental action); seek support (also called support mobilization); focus on positive (also labelled positive reappraisal, growth, cognitive restructuring, and seek meaning); threat minimization (also called distancing, or detachment); escape-avoidance (also called wishful thinking); and accept responsibility (also labelled self-blame). Whatever the merits of the questionnaire, and it is not without its critics, the same factor structures have

essentially been found across eleven studies of different populations of subjects (Marshall & Dunkel-Schetter, 1987).

What specifically do the critics object to when self-report measures are employed? The first point relates to the changing nature of coping. The WCI is usually employed as a retrospective assessment of coping over previous periods. As a result, information about the patterning of coping is lost, thus not revealing when during the period and in what order particular strategies were used. Second, self-reporting measures are not without their pitfalls. People do not always remember events and their actions veridically. Smith, Leffingwell, & Ptacek, (1999) found on average, only 25% shared variance between the daily and retrospective accounts of people coping over a 7-day period. Measures obtained in closer proximity to the event and coping and while they are fresh in the subject's mind may be a more accurate means of measuring because they are less subject to memory distortions such as selective memory and failures of memory (Stone & Neale, 1984). In hindsight, studies employing retrospective accounts of how people coped are liable for the most criticism.

Another issue that arises when measuring coping is automatic verse controlled behaviour. "Automatic processes grow out of one's frequent and consistent experience, so that they represent the regularities of that experience. Routine conscious processes ... become subsumed by efficient automatic processes that operate without the need for conscious guidance, attention, or awareness" (Wegner & Bargh, 1998, p. 463). The necessity of *conscious* attention need only apply when a regularly used strategy does not work, when one is in a new situation, or when

unexpected problems and difficulties arise (Frese & Sabini, 1985). According to Frese, (1986):

> "Only when the normal, easy to use, automatic coping strategies do not work do we think of them consciously. This notion has implications for measuring coping. If coping strategies are checked off on a questionnaire, only consciously used strategies will be checked. This means that problematic coping strategies will be reported more often than nonproblematic (i.e., automatically used) ones. Therefore, this theory would suggest that measuring coping with questionnaires (e.g., like the one used by Lazarus and co-workers,) leads to reporting problematic coping strategies, although indirect measurement of coping (that includes automatic coping) will have different relations with psychological functioning. Conscious and problematic coping strategies should be positively related to psychological dysfunctioning although automatic coping strategies should be negatively related (p. 185).

Accordingly, Frese's result confirmed his hypothesis: "The most consistent findings, so far, are the simple correlations between coping and psychosomatic complaints. These are nearly all positive-meaning more coping leads to more psychosomatic complaints" (p. 196).

The jury is still out as to the accurateness of Frese's account, mainly because more recent studies, seemingly contradict his methodological stance concerning the automated ness of coping. For example, Compas and Boyer (2001) provide the following definition of coping:

> We define coping as conscious volitional efforts to regulate emotion, cognition, behavior, physiology, and the environment in response to stressful events or circumstances. Optimal coping is planful, strategic, organized, goal directed, linguistically based, and context-specific. Coping is a subset of responses to stress, with coping referring to regulatory efforts that are volitionally and intentionally enacted specifically in response to stress. Regulation involves a broad array of responses, including efforts to (a) initiate, (b) terminate or delay, (c) modify or change the form or content, (d) modulate the amount or intensity of a thought, emotion, behavior, or physiological reaction, and (e) redirect thought

> or behavior toward a new target. Coping is a subset of self-regulatory processes; therefore, it is important to recognize that self-regulation includes responses in nonstressful circumstances that are not characterized as coping. These regulatory processes both draw on and are constrained by the biological, cognitive, social, and emotional development of the individual. An individual's developmental level contributes to the resources that are available for coping and limits the types of coping responses the individual can enact (p. 6).

Note the above definition specifically emphasised coping as being conscious and volitional. It is evident that people do not normally suffer distress *passively*; they attempt to manage the demands placed on them through various coping strategies (Lazarus & Folkman, 1984).

Compas and Boyle's (2001) description of a stress response is different to Frese (1985) in that they refer to a dual process. The dual processes are reflected in a system of involuntary, automatic response processes and a second system of voluntary, controlled responses. Both involuntary and voluntary responses to stress can be further distinguished as engaging with, versus disengaging from, the source of stress and one's emotional responses to the stressor. The origins of the engagement-disengagement dimension can be found in the concept of the automatic fight (engagement) or flight (disengagement) response and in the contrast between approach and avoidance responses. Within the dual-process model of stress responses, coping involves only voluntary response processes, whereas attention to threatening and stressful information involves both involuntary and voluntary response systems. Attention is deployed before the initiation of coping responses and permits individuals to orient toward and appraise potential stressors. In addition, once coping strategies have been engaged, attentional processes are continually engaged to assess the status of the stressor, monitor changing environmental or internal inputs, and facilitate

certain coping strategies that involve shifting and focusing attention. Frese does not make this classification (between attentional and coping processes) in his study and the coping strategies he measures, arguably, seem to orient more to the attentional processes of engaging and disengaging (e.g., denial, socially focussed, brooding, socially oriented, diverting attention, repression, avoidance, and over-reporting). If indeed Frese has not measured coping but surveyed attentional processes, then it makes sense that focusing attention towards threatening stimuli results in magnifying the actual stressor, which could result in increased distress (Compas & Boyer, 2001; Mathews & MacLeod, 1994; Walker, Smith, Garber, & Van Slyke, 1997). Needless to say, more research is needed to investigate the application of overlearned coping strategies and their effects before the jury can make a final verdict.

Coping and Development

As people grow older, coping strategies need to develop in order to enable them to adapt to the demands that are coupled with an imminently changing developmental ecology. Changes in development are the result of biological, cognitive, and socioemotional processes that are working in concert throughout the human life cycle. Basically, the morbid reality is that human beings are born to die, a cycle that is characterised by gains and losses; that is, as a person grows older their developmental ecology becomes more constrained because developmental losses begin to exceed any gains (Heckhausen, 1997). As a result, survival requires the person to cope with, not only the losses of old age, but the gains that permit an adult human to function primarily as a social being in their ecology.

Initially, infants regulate functions of arousal, behavior, and emotions through automatic, biologically based processes (Derryberry & Rothbart, 1997; Gunnar,

1994), which are later augmented by responses that are acquired through learning and experience, although they remain automatic inasmuch as they are controlled by environmental cues that elicit and maintain behavior (Compas & Boyer, 2001; Rothbart, 1989). For example, during the early stages of life, regulation of fear may be primarily automatic and reactive; however, additional cortical development increases the child's capacity for voluntary or effortful forms of control (McNally, 1995; Rothbart, Posner, & Boylan, 1990).

Coping strategies are influenced by the emergence of cognitive and behavioral capacities for regulation of the self and the environment, including the emergence of intentionality, representational thinking, language, metacognition, and the capacity for delay (Compas & Boyer, 2001). With the development of more complex language capacities emerging in early to middle childhood, more complex methods of achieving the goals of emotional palliation and problem solving tend to surface, thus, as expected, providing greater diversity and flexibility in the range of coping responses available to the individual. It is also expected that, as cognitive skills are increasing, young adolescences will demonstrate a greater ability to match coping efforts to the perceived and/or objective characteristics of stress (Compas & Boyer, 2001).

As people grow older they tend to shift from problem- to emotion-focused coping. Possibly the main reason for this change in coping style is because attentional focus shifts from gains to losses. The elderly report more stress relating to health than younger people, whilst middle-aged individuals report more stress relating to work, finances, and family and friends (Brandtstaedter & Renner, 1990; Folkman, Lazarus, Pimley, & Novacek, 1987; Heckhausen, 1997). The elderly do not have the strength

or faculty they once perceived thereby appraising situations as less changeable, nevertheless maintaining a sense of control by using more of an accommodative (emotion-focused) mode of coping (Brandtstaedter & Renner, 1990).

Summary

Coping relates to stress. In essence, coping is the way that people deal with stress, therefore making it an important process because it not only palliative, but it is the instrumental basis for how a person attempts to modify or adapt to the stress. In other words, being able to cope enables a person to function in their ecology; otherwise prolonged stress could have detrimental results to a person's overall morale, social functioning and somatic health.

This thesis has focused on a cognitive-relational definition of stress and coping. This implies that stress results from a transaction between the person and the environment that is appraised as harm-loss, threat, or challenge and coping serves to: (1) alter the troubled transaction through an instrumental or problem solving strategy; and/or (2) manage the somatic and subjective component of the stress emotions (e.g., anxiety, anger, depression), without changing the actual person-environment relationship. However, these two types of coping are not mutually exclusive, they operate in unison and constantly change the person-environment relationship, thereby suggesting that coping is continuously changing as the encounter unfolds – shifts in the situation may also be independent of the person.

An important aspect of coping, with its emphasis on the relationship between the person and the environment in a specific context, is the fit between reality and appraisal and the fit between appraisal and coping. In the contextual model attention is given to the quality of coping, regardless of its outcome. The fit between appraisal

and coping refers to the fit between situational appraisals of controllability (secondary appraisal) and actual coping processes. It has been discussed that, generally, problem-focused-coping is appropriate in encounters that hold the potential for personal control, unlike emotion-focused coping, which is appropriate in encounters where there is little the individual can do to control the outcome or recurrence. There are many factors that distinguish whether a persons perceives the controllability of a situation and dispositions were inferred as having some influence over the selection of coping strategy. The next part of this thesis takes a further look at dispositional characteristics – namely causal attributions, which may or may not effect the stress reaction and/or the subsequent coping strategies.

Causal Attributions

Good and bad events occur to almost everyone in life. For example, take a student who has just failed an exam. This student may be interested in *why* they failed – maybe because they lacked effort in their preparation, or the exam was harder than expected. The layperson and the scientist alike try to find the causes of why an event happened, so then perhaps, they can understand, predict, or influence any likely future occurrences of the event – whether it be 'good' or 'bad'. In essence, assumptions are formulated about causes or *why* things happen – these assumptions are referred to as causal attributions.

While this chapter is about perspectives on attribution, I would like to point out that there is no monolithic theory in this domain of work. Rather, there are several theoretical approaches to causal attribution processes, each of which has some similarities to and differences from the others. These attribution conceptions are primarily concerned with the process of making an attribution, however, there are some analyses that are concerned primarily with the consequences of arriving at a given attribution, thus formulating an attributional theory. There are attribution-based theories of emotion, achievement, motivation, affiliation, helping, revenge, and equity. In this chapter, I will mainly focus on an attributional theory of achievement motivation and emotion (Weiner, 1985, 1986).

In the following pages, an abbreviated description of attributional theory of motivation will be presented. The first part of this chapter will look at what causal attributions are and concludes that attributional search not only starts at infancy, but is shaped by such ontogenic experiences. In line with Weiner's attributional model, the

next section explores the content of causal thinking and explicates a three dimensional taxonomy. With regards to this taxonomy, I will next highlight some of the general findings currently established, and then continue to discuss how attributions predict future performance and how they influence motivation and emotion. The last section looks at explanatory styles, people's habitual schemas as to why things happen, whereby there is evidence to suggest that such styles can potentially impact on peoples' wellbeing. But first, what is a causal attribution?

Attributional Theory

"An attribution is an inference about why an event occurred or about a person's dispositions or other psychological states...Attributions may be perceptions and inferences about others or about self" (Weary, Stanley, & Harvey, 1989, pp. 3-4). Traditional attributional research endeavours to discover *what* attributions people make, and *how* they use available information to come to those particular attributions.

In the main, *why* people make causal attributions has already been addressed. As mentioned previously, laypeople are basically naive scientists who make inferences or assumptions from their encounters or experiences with the environment, thereby establishing etiological (causal) conclusions that may enable their ecology to become more predictive (Kelley, 1971). In simpler words, ideally it is a requirement for people to learn and gain knowledge about the causes of outcomes that result from their encounters with the environment, so they can either promote adaptation and survival (functionalism, which often is linked with hedonism) or, if this basic survival drive is already accomplished, then to better understand oneself and the environment (mastery) (Weiner, 1986).

Once a person has assigned a cause to an outcome (gained knowledge), then this can become a prescription or guide for future endeavour. If the prior outcome was successful, then there is a likely chance that prior causal networks may be reinstated in the future. So, for example, if I believe a lot of study produces a favourable grade in an exam, then I am likely to study hard for future exams. On the other hand, if the prior outcome or event was undesired, such as I failed the exam, then there is a strong possibility that I will attempt to alter the causes to produce a different (more positive) effect. Basically, "causes are constructions imposed by the perceiver (either an actor or observer) to account for the relation between an action and an outcome. Note that causal ascription as used here refers to why an *outcome* has occurred, as opposed to why an *action* has taken place (Weiner, 1986). Weiner further argues that such construction building or attributional search is in fact spontaneous.

Attributional search is promoted by nonattainment rather that attainment of a goal (political loss, defeat in a sports contest, examination failure, poor job performance and negative interpersonal behavior), especially with achievement related outcomes (Weiner, 1986). Consider for example a person who passes an exam with a satisfactory grade – the cause of the outcome does not necessarily need to be analysed because the goal has been achieved (unless of course they are surprised by the outcome). In contrast, failing the exam is likely to thwart the goal achiever, rendering them into an uncomfortable, regrettable, and possibly dysfunctional state - a state that a person would otherwise avoid if they had the chance. "The law of effect captures the idea that organisms are motivated to terminate or prevent a negative state of affairs. Effective coping importantly depends on locating the cause(s) of failure. In this case, attributional search more clearly severs an adaptive, and therefore, hedonic, function" (Weiner, 1966, p. 33).

Moreover, unexpected outcomes also stimulate causal thinking (e.g., passing an exam with a high grade when expecting a simple pass). Unexpected outcomes are novel events, thus promoting exploration or curiosity (Berlyne, 1960; Berlyne, Koenig, & Hirota, 1966; Berlyne, Craw, Salapatek, & Lewis, 1963). Implicated in this is the idea that in the face of uncertainty, attributional search can be considered one instance of the more general class of exploratory behaviours elicited (Weiner, 1986).

Infants display a fine example of exploratory attributional search, dependent, of course, on their attachment (see Ainsworth, Blehar, Waters, & Wall, 1978). The attachment behavioural system is largely governed by a "general systems perspective," which, in part, refers to the attachment between infant-caregiver as a protective bond (Marvin & Britner, 1999). At its most basic level, it has a component that facilitates the youngster's tendency to explore and learn, and to become more independent, and in moments of distress a responsive or sensitive caregiver(s) is physically accessible and available for help and/or protection. The infant experiences him or herself as competent to produce desired and prevent undesired outcomes, based on their history of interactions with the environment (Skinner, 1992). In turn, the infant develops representations or internal working models (Bowlby, 1980) of its experiences; that is, the infant assimilates or accommodates cause and effect patterns from its social and environmental interactions. These working models are the filters, which shape social experiences and construct self-understanding (Thompson, 1999). In part, the infant may develop models that would enable him or her to make predictions or expectations about the likely outcomes of future transactions, both with the physical and social environment; in other words, the infant develops a construct of perceived control. As one can see, from the earliest stages of life the attributor (the individual) is influenced or biased as to how they perceive or attribute causes.

The Content of Causal Thinking

As the infant grows up and becomes an adult, a myriad of cause and effect scenarios would have been encountered or explored. Categorising all the perceived causes for successes and failures would be almost impossible when taking into account the numerous different experiences that an adult, or even a child encounters. For example, in achievement-related situations, causal prescriptions have included task difficulty, luck, effort, ability, interest, and mood just to name a few (Weiner, 1986). These prescriptions have come a long way from Heider's (1958) (the founder of attribution theory) first prescriptions of internal verse external causal attributions.

Heider (1958) posited that people search for the causal structure of events by either attributing to the environment (external attribution) or to something in the person involved in the event (internal attribution). Types of external attributions include those attributed to the social and physical circumstances surrounding the action, while types of internal attributions include those attributed to the actor's ability, attitude, motivation, or emotional state. For example, a student may infer that his exam failure was a result of the test being too difficult. This inference represents an external attribution. On the other hand, an internal attribution would be represented by the student's inference that his exam failure was a result of his lack of motivation or effort in studying for the exam. Of course, the student may arrive at a conclusion that a mixture of these internal and external factors caused his exam failure.

Notwithstanding the hallmark of Heider's work in that his internal-external dimensions provided the grounding for causal attribution, more dimensions were needed because some causes fluctuated while others remained constant (Weiner, 1986). For example, although ability is perceived as a relatively constant capacity,

causal factors like mood and effort are perceived as more variable, changing from moment to moment or from one time interval to the next. This also holds true for external causes. If for example, a test were made easy at the beginning of a course and grades were relatively high, then future tests may be made harder to bring down the grade average. Causes within an identical grouping (internal and external) have the ability to differ; therefore, an additional causal dimension was needed to capture this dissimilarity, namely stable and unstable. This additional dimension of causality permits more sophisticated comparisons between causes (see Figure 3).

	Internal	External
Stable	Aptitude	Objective task characteristics
Unstable	Temporary exertion	Chance

Figure 3. Locus X Stability classification scheme (Weiner, 1986)

When one takes a closer look at mood, fatigue, and temporary effort, it can be recognised that they are all internal and unstable causes. But effort is distinguishable from the other two when one considers volitional control – an individual can increase or decrease expenditure of effort, unlike the mood and fatigue, which under most circumstance cannot be willed to change (Rosenbaum, 1972, cited in Weiner, 1985). As a result, controllability was added to the causal attribution taxonomy. And rightly so, the belief that one has control over their life and circumstances deters for example, helplessness, depression, maladaptive stress reactions and a variety of other undesirable psychological states and consequences (e.g., Abramson, Seligman, & Teasdale, 1978; Affleck, Tennen, Pfeiffer, & Fifield, 1987; Averill, 1973; Compas, et al., 1988a; Compas, Banez, Malcarne, & Worsham, 1991; Folkman, 1997; Geer,

Davison, & Gatchel, 1970; Jenkins, 1979; Karuza, Zevon, Gleason, Karuza, & Nash, 1990; Langer, Janis, & Wolfer, 1975).

Rotter (1966) first introduced the idea that people could have an internal and external perception of control (of reinforcement), which created some difficulties for Weiner, (1979). Within the three-dimensional taxonomy, two of the proposed causal properties are labelled *locus* and *control*. A cause like math aptitude could be perceived as internal and uncontrollable (determined by skill and ability) by a failing student because he/she considers aptitude to be genetically determined. According to Rotter's dimension however, this indicates that the outcome is perceived as subject to internal *control* – not uncontrollable. The confusion lies in Rotter's one-dimensional taxonomy. Causal perceptions are described by locus *and* control, not locus of control (Weiner, 1985). The locus dimension has therefore, been labelled *locus of causality* to avoid confusion.

There is a plethora of research for and against the use of the three constructs. As previously mentioned, the layperson will have a myriad of causal constructs that describe their outcomes, which will not be as global or epistemological as the attribution theorists. Despite such distinctions, various research using factor or cluster analysis (Meyer, 1980; Meyer & Koelbl, 1982) and multidimensional scaling (Michela, Peplau, & Weeks, 1982) support the contention that there are commonly three dimensions or properties of perceived causality. Moreover, the empirical dimensions that have emerged tend to be reliable, meaningful, and general across situations (Weiner, 1985, 1986). This is not to say that other dimensions are available, but the point is that the above factors appear to be parsimonious inasmuch as "there is

a relative simplicity in the organization of causal thinking, just as there is in the selection of specific causes" (Weiner, 1985, p. 552).

Stability, Locus, and Control: What is known so far?

First, I should mention that this thesis is concerned with the achievement domain, so I will limit the findings and focus specifically to academic success or failure. In particular, a number of studies reported that attributions to internal causes were more likely to occur following successful academic outcomes, whereas external causes are more likely to be called upon to explain academic failures (Bernstein, Stephan, & Davis, 1979; Frieze & Bar Tal, 1980; Kovenklioglu & Greenhaus, 1978; Watkins & Regmi, 1994). In these studies, internal attributions such as ability and effort were more likely to be endorsed by those who had done well (or who imagined themselves or others doing well) on a course exam, whereas external attributions such as bad luck or test difficulty were more likely to be endorsed by those who had done poorly or failed (or imagined themselves or others failing).

Further research investigating academic failure and success has yielded results that suggest stability, in addition to locus of control, constituted attributional structure. When students were asked to attribute causes to their actual performance on a college exam, perceived success (relative to perceived failure) was attributed to both internal and stable causes (Arkin & Maruyama, 1979). For example, success was attributed more often than failure to ability (an internal, stable cause), whereas failure was attributed more often to being in a bad mood (an internal, unstable cause) (Frieze, 1976). Seemingly, stability is a more important attributional dimension than control in differentiating causes for success and failure. There is no doubt that a bias may exist

for attributing successful academic performances to internal and probably stable causes while attributing academic failures to external (and perhaps unstable) causes.

A possible explanation for the above pattern is a self-serving attributional bias that protects the self-esteem of the attributor. Implicit in this argument is the notion that individuals' causal attributional outcomes are mediated by positive and negative affect states produced by success and failure experiences (Weary, 1980; Weary & et al., 1982). As described by Weary, self-enhancing attributions (i.e., high self-attributions) for success are mediated by and serve to maintain relatively high levels of positive affect and feelings of egotism, and self-protective attributions (i.e., low self-attributions following failure) are mediated by and function to alleviate high levels of negative affect, again to increase feelings of egotism; that is, self-protective attributions serve a threat-reducing purpose. In other words, individuals tend to take credit for good outcomes and deny blame for bad outcomes, hence enhancing or protecting their self-esteem.

Gender differences have also been cited in studies focusing on learned helplessness and achievement-related failures. In earlier studies by Dweck, Goetz, and Strauss (1980), girls attribute failure to internal factors such as lack of ability, in contrast with boys who use external rationale, such as teacher variables. More recent studies, however, find no differences in causal attributions when investigating either achievement or depression (e.g., Cutler, 1996; Lee, 1999).

Attributions predict future performance

So far I have hinted that causal attributions explain why an outcome occurred. In addition, there is a bridge between causal attributions and future performance. For example, if a student were to attribute academic failure to their aptitude (an internal,

stable, and perhaps uncontrollable cause), then there is not much of an expectancy that their future outcomes would result differently, thus influencing their motivation and performance ("If I failed because I am stupid, then what is the point of studying – I will only fail again"). On the other hand, if a student was to attribute such failure to their effort (an unstable, external, and controllable cause), then it could be expected that they would increase their effort if they wanted a better outcome on subsequent tests.

Research in this area has yielded results that support the stability dimension of attributions as being central to assessing expected future outcomes (Kovenklioglu & Greenhaus, 1978; Weiner, 1985, 1986). In the main, among students who have succeeded on their tests, high ability (stable ascription) tended to correlate positively with both expected and actual performance, while good luck (unstable ascription) negatively correlated. Among those who experienced failure however, expected performance was inclined to positively relate to attributions to low effort (unstable ascription) and negatively relate to attributions to low ability (stable ascription). The sense is that, in principle, "changes in expectancy of success following an outcome are influenced by the perceived stability of the cause of the event" (Weiner, 1985, p. 557). This principle has three corollaries:

1. If the outcome of an event is ascribed to a stable cause, then that outcome will be anticipated with increased certainty, or with an increased expectancy, in the future.
2. If the outcome of an event is ascribed to an unstable cause, then the certainty or expectancy of that outcome may be unchanged or the future may be anticipated to be different from the past.
3. Outcomes ascribed to stable causes will be anticipated to be repeated in the future with a greater degree of certainty than are outcomes ascribed to unstable causes (Weiner, 1985, p. 559).

Attributions and motivation

I have briefly highlighted that causal attributions influence expectancy of success. An attribution theory of motivation requires such a link, insofar as goal anticipations certainly affect other thoughts and actions, albeit they are not sufficient determinants of action (Weiner, 1985). In additional to expectancies, another class of variables with motivational impact are called goal incentives (from both cognitive and mechanistic conceptions of behaviour), or the properties of the goal object. "Motivation is believed to be determined by what one can get (incentive) as well as by the likelihood of getting it (expectancy). This is the essence of the position of Expectancy X Value theorists" (Weiner, 1985, p. 559).

Perceived causality (the reason why the goal was reached), however, does not influence the inherent properties or the objective value of the goal object. Despite the reasons for getting a dollar (hard work, luck, or a gift), it will always have the value of one dollar. Moving aside the objective value, instead, consider the subjective value of the goal – in terms of incentive value or consequences of goal attainment for the actor. One dollar is more preferable than 50 cents because it can buy twice as many lollies. Although causal ascriptions do not influence the objective properties of things, they do determine or guide emotional reactions, or the subjective consequences of gaol attainment (Weiner, 1985). For example, receiving a dollar from a friend as opposed to an enemy will have different affective consequences (Heider, 1958 cited in Weiner, 1985). Or, finding a dollar on the ground may elicit surprise; being hit on the head with a dollar coin while playing soccer may produce anger; and a dollar received from friend in time of need may beget gratitude. These diverse affective reactions could generate quite disparate actions. For example, anger but not gratitude could lead to

reciprocal violent behaviour. The point is, causal ascriptions influence emotions, and that affective reactions play a role in motivated behaviour (Weiner, 1985).

The Attribution-Emotion Process

I am not attempting to provide an elaborate theory of emotion inasmuch as that would be a thesis in its own right and is not the present goal. Instead, I will highlight how attributions, according to Weiner, play a role in differentiating emotional quality and experience.

Several converging theories point to the idea that cognitions of increasing complexity enter into the emotion process to further refine and differentiate experience (e.g., Arnold, 1970; Lazarus, 1966; 1982; Leventhal & Scherer, 1987; Oatley & Johnson Laird, 1987; Schachter & Singer, 1962). In keeping with attributional processes, Weiner contends that, following the outcome of an event, there is a general positive or negative reaction (a "primitive emotion) based on the perceived success or failure of the outcome (the "primary appraisal"). Such primitive emotions may include happy for success, or frustrated or sad for failure, but importantly, are determined by the attainment or nonattainment of a desired goal – not by the cause of the outcome (these emotions are labelled outcome dependent-attribution independent).

With this distinction in mind, let us focus on the causal ascription, which for all intents and purpose will follow the outcome appraisal and the immediate affective reaction. As mentioned previously, the chosen (notwithstanding automatic processes) attribution(s) will generate a different set of emotions. For example, surprise is felt when success is perceived as a result of good luck, whereas calmness or serenity

results from success that follows a long–term period of effort expenditure (these emotions are labelled attribution dependent)(Weiner, 1985).

To a very great extent, causal dimensions will additionally influence the emotional process. For example, the emotion of pride and feelings of self-esteem are linked with the locus dimension of causality; anger, gratitude, guilt, pity, and shame all are connected with the controllability dimension; and feelings of hopelessness (hopefulness) are associated with causal stability (see Weiner & Graham, 1985 for fuller discussion). Generally, external attributions for positive or negative outcomes do not influence feelings about the self, whereas internal attributions – whatever they may be – raise (successful outcomes) or lower (failure) self-esteem or self-worth (Weiner, 1985). "Hence, self-related emotions are influenced by the causal property of locus, rather than by a specific cause per se" (Weiner, 1985, p. 561).

Attributional style

It seems reasonable that people develop attributional styles based on their past experience and learning; that is, explanations an individual makes for good and bad events would develop into a habitual pattern of thinking. In support of this position, research by Seligman and others suggests that explanatory style for negative events may persist across the life span and may constitute an enduring risk factor for depression, low achievement, and physical illness (Burns & Seligman, 1989; Peterson, Seligman, & Vaillant, 1988). In a broad sense, people can have either a positive or pessimistic explanatory style, whereby optimistic thinking is linked to good health and alternatively, pessimism can lead to an overall irrational thinking and low frustration tolerance (Peterson, 2000; Ziegler & Hawley, 2001).

The point is, when individuals consistently use the same type of attributions to explain a class of events in their lives, then it could be considered an attributional style (Marsh, 1984). The attribution style could be expected to influence an individual's cognitive appraisal of an event and the individual's choice of coping approaches. For example, if a student explains academic failure with an internal, stable, and perhaps uncontrollable attribution (e.g., aptitude), then, when faced with another academic challenge, it is likely, according to the previous discussion on expectancy, that s/he will see the situation as a further threat to his or her self-concept over which they have little control. They may believe that it is futile to deal with the problem directly thereby opting for an emotional coping-strategy; this would be, arguably, a poor fit between both objective reality and appraisal, and appraisal and coping.

Summary

I have only discussed one type of attribution theory, namely Weiner's Attributional Theory of Achievement Motivation and Emotion. Even then, I only provided a brief insight, accentuating the dimensions that are underpinning his theory. These include, stability, locus, and controllability. When considering these dimensions in combination, predictable cognitive and behavioural consequences are further apparent. For negative outcomes, internal, stable, and uncontrollable attributions, such as a belief that exam failure is a result of poor ability (rather arbitrary as research suggests failure leads to external attributions), leads to decrements in self-esteem (consequence of the Locus dimension), decreased expectancy of future success (consequence of the Stability dimension) and feelings of pity and beliefs that nothing can be done (consequence of the Controllability

dimension). Hence, subsequent action is likely to be restrained or feeble (consequence of all three dimensions). In essence, such an attributional style is pessimistic, thus it is not likely to motivate the individual and typically results in helplessness or poor health.

Stress, coping, and Causal Attributions

Much of attribution theory evolved in the context of negative events. For example, theorists like Weiner have speculated how perceived causes for academic failure might explain an individual's reactions to such an event. These reactions could relate to negatively toned emotions or distress, an underlying facet of a stress response. In addition, the causal dimension controllability is pertinent to Wiener's attributional theory and has been mentioned as an important determinant of the stress response. Additionally, efficacy of coping could be linked to the expectancy for future success or failure, and the type and intensity of ensuing behaviour could be the coping strategy used in relation to a stressful outcome. Clearly, attributions, stress, and coping are all joined at the hip.

It is easy to appreciate why stress researchers are interested in attributions. First, laboratory simulations (Wong & Weiner, 1981) and naturalistic studies of distressed populations (Taylor, et al., 1984) provide evidence that people spontaneously search for attributions in stressful circumstances. Moreover, achievement contexts have constantly proven attributions to be excellent predictors of subsequent affective and behavioral responses (Weiner, 1985, 1986). Last, cognitions such as control and self-blame are constructs that are evident in both attributional and stress research (e.g., Thompson & Spacapan, 1991).

The Reformulated learned helplessness (RLH) theory (Abramson, Seligman, & Teasdale, 1978) proposes that it is locus, stability, and globality of an attribution that determines subsequent distress. Over the years, contradictory to the RLH theory, results have shown that controllability is a necessary construct when investigating pathology in both patient (Schiaffino & Revenson, 1992) and community populations

(Brown & Siegel, 1988). Moreover, in a recent study, classification of the attribution according to its controllability as well as locus and stability, not globality, proved essential when predicting either coping behaviour or states of distress (Amirkhan, 1998). Consequently, the traditional dimensions of locus, stability, and controllability (Weiner, 1985, 1986) are necessary for such studies intending to investigate the prediction of either coping or stress-related pathology (Amirkhan, 1998).

Previous research

The questions are, how are attributions applicable to stress research? Is the appropriate focus of attributions for the cause of the problem or for its solutions (see Brickman, Rabinowitz, Karuza, Coates, Cohn, & Kiddler, 1982)? In light of these questions, some subsequent studies verified the differential influences of attributions for events and attributions for solutions. For example, a study of Aids and Aid related complex (ARC) victims, found that attributing "possible improvement" versus attributing the illness to oneself had differential effects on distress, and a change in health-related behaviour was only associated with attributions for improvement (Moulton, Sweet, Temoshok, & Mandel, 1987). Likewise, a study of young and elderly adults found older people, compared to younger, preferred low-responsibility for both causes and solutions, however, only the latter (creating a solution) was related to well-being for both the young and the old (Karuza, Zevon, Gleason, Karuza, & Nash, 1990). In an elderly sample, attributions for problems were differentiated from attributions for the management of problems and found the latter to be better predictors of coping (Aldwin & Revenson, 1987).

Coping or Distress?

Seemingly, there is a relationship between some attributions and certain categories of coping behaviours. Although they have not been consistent, RLH studies support this relationship: Internal, stable, global attributions have been linked to both problem directed coping (Follette & Jacobson, 1987) and more avoidant patterns of response (i.e., suppression and minimization) (Rim, 1990). On the other hand, studies incorporating the dimension of controllability have yielded more consistent results. Controllable, internal, and unstable causes for stressors have generally found to relate negatively to avoidant coping and positively to instrumental coping (Baumgardner, Heppner, & Arkin, 1986; Rodin, Bohm, & Wack, 1982). Amirkhan (1998) compared attributions for stressful events to attributions for coping failures and found the latter to be superior predictors of subsequent behaviour. Failures ascribed to internal, unstable, and controllable factors for example, produced active efforts to resolve the problem or rally social supports, subsequently reducing subjective distress and stress-related pathology. Avoidant and escapist responses, which aggravate distress and illness, were the result of failures attributed to external, stable, and uncontrollable forces.

Noticeably, there is an indirect relationship between attributions and distress. For the most part, coping behaviours mediate the effect of attributions; direct relationships have been reported (e.g., Ostell & Divers, 1987; Amirkhan, 1998). However, attributions are generally better predictors of distress when pitted against coping responses (e.g., Bruder-Mattson & Hovanitz, 1990; Mikulincer, 1989).

The current study

To date, the research has been concerned with attributions as predictors of stress-related pathology, not with psychological stress per se. Do a person's causal attributions also predict the levels of psychological stress in a demanding encounter? One may argue that this is an a priori; that is, if causal attributions relate to coping strategies, which are conducive to the appraisal of stress, then surely attributions predict the level of psychological stress. However, some coping strategies are differentiated by causal attributions, thus, the *level* of psychological stress that a person experiences may be determined, in part, by their causal attributions. For example, people tend to appraise an uncontrollable event as being more stressful than a controllable event, even if they do not actually do anything to affect it (Suls & Mullen, 1981a; Thompson, 1981). Therefore, I hypothesis that when a person is faced with a demand, their causal attributions will both influence the selection of coping strategy and the level of psychological stress that is experienced. Specifically, an external, stable, and uncontrollable causal attribution, due to its maladaptive tendency, should positively relate to stress, and negatively relate to social support, especially when one considers that internal, unstable, and controllable attributions produces active efforts to resolve the problem or rally social supports.

Method

Participants

Participants were recruited in a variety of university settings (i.e., Sitting on the steps outside the library, sitting on the grass, on benches and outside cafes). Potential participants were approached by myself and were asked if they would like to help with my thesis. There was no order as to how people were approached – I tried to keep the selection as random as possible. I also mentioned that they would receive a one-dollar Instant Kiwi ticket (giving them the chance to win $10,000) after completing a questionnaire, which should take no longer than 15 minutes of their time. By completing the questionnaire, it was understood by the participants that they consented to being subjects in my research thesis.

The sample was slightly biased. There were more males (99) than females (90) (52.4% versus 47.6%) and ages ranged from 18 to 55 years (with a mean of 24).

Measures

A questionnaire was used to obtain self-report responses from participants (see Appendix A). It contained four parts: (1) Age and gender; (2) Stress measure; (3) Causal attribution measure; and (4) Coping measure. The order of presentation of each measure was fixed and corresponded to assumed chronology of a stressful episode (i.e., stress response – causal attribution – coping). Because stress is considered contextual, I provided a stressful situation that was the same for all respondents. The situation was as follows:

> "Imagine that you have just received a grade for an important mid year exam for one of your major papers. Unfortunately, you have failed."

Attribution theory posits, for example, that the type of cause selected by the student to explain the failure would be the most powerful predictor of the likelihood of that student preparing for the final exam (coping strategy) (Weiner, 1985, 1986).

Stress Measure

To measure their perceptions of stress the following scales were used.

How stressed would you be in this situation?

Not at all stressed Extremely stressed

1 2 3 4 5 6 7 8 9

How anxious would you become in this situation?

Not at all anxious Extremely anxious

1 2 3 4 5 6 7 8 9

How unpleasant would this situation be?

Not at all unpleasant Extremely unpleasant

1 2 3 4 5 6 7 8 9

How frustrated would you be in this situation?

Not at all frustrated Extremely frustrated

1 2 3 4 5 6 7 8 9

How much worry would this situation cause you?

No worry at all Constant worry

1 2 3 4 5 6 7 8 9

How irritated would you be in this situation?

Not at all irritated Extremely irritated

1 2 3 4 5 6 7 8 9

As expected, there was an internal consistency among the stress measures (alpha = .91). As a result, the scores were summed to produce one composite stress measure, namely total stress.

Attribution Measure

To typify the causes, the Causal Dimension Scale (CDS) (Russell, 1982) was used. This allowed respondents to themselves classify their attributions according to the dimensions of locus, stability, and controllability. The three-dimensional structure of the measure has been shown to have acceptable levels of reliability (with an average Chronbach's alpha coefficient of .81). Both convergent and discriminant validity have been demonstrated for the measure (Russell, 1982). The following appeared on the questionnaire:

Instructions: Think about the reason or reasons why you may have failed the midterm exam. The items below concern your impressions or opinions of the cause or causes of your failure. Circle one number for each of the following scales.

1.	Is the cause(s) something that:									
	Reflects an aspect of yourself	9	8	7	6	5	4	3	2	1	Reflects an aspect of the situation
2.	Is the cause(s):									
	Controllable by you or other people	9	8	7	6	5	4	3	2	1	Uncontrollable by you or other people
3.	Is the cause(s) something that is:									
	Permanent	9	8	7	6	5	4	3	2	1	Temporary
4.	Is the cause(s) something:									
	Intended by you or other people	9	8	7	6	5	4	3	2	1	Unintended by you or other people
5.	Is the cause(s) something that is:									
	Outside of you	1	2	3	4	5	6	7	8	9	Inside of you
6.	Is the cause(s) something that is:									
	Variable over time	1	2	3	4	5	6	7	8	9	Stable over time
7.	Is the cause(s):									
	Something about you	9	8	7	6	5	4	3	2	1	Something about others

8. Is the cause(s) something that is:

Changeable	1	2	3	4	5	6	7	8	9	Unchanging

9. Is the cause(s) something for which:

No one is responsible	1	2	3	4	5	6	7	8	9	Someone is responsible

As suggested by Russel, a total score for each of the three subscales was arrived at by summing the responses to the individual items as follows: (1) locus of causality – Items 1, 5, 7; (2) stability – Items 3, 6, and 8; (3) controllability – Items 2,4, and 9. High scores on these subscales indicate that the cause is perceived as internal, stable, and controllable.

Coping Measure

To assess coping responses, an adapted version of the Revised Ways of Coping Checklist (RWCC) (Vitaliano, et al., 1985) was used (see below). This questionnaire reflects Lazarus and Folkman's theory of coping (Lazarus & Folkman, 1984a). Results obtained from factor analysis in several studies have demonstrated successful separation of the scales into Problem-focused and Emotion-focused coping (Folkman & Lazarus, 1985; Vitaliano, et al., 1985). Vitaliano, et al. (1985) reported that the internal consistency reliabilities ranged from .82 to .83 for two samples, and evidence for construct validity was provided by the finding that depression was positively related to the revised Wishful Thinking scale in three samples. In addition, a significant negative correlation was found between depression and the revised Problem-focused scales, which were both positively and negatively related to anxiety scores. Vitaliano, et al. (1985) also reported scores on the revised scales were not related to age, sex, education, and to marital status among two samples.

Despite the fact that other theorists measures have been employed to assess attributions and coping (e.g., (Russell, 1982; Vitaliano, et al., 1985), it is envisaged

that factorial analysis will confirm whether such measures are reliable and valid. Although the individual items will remain the same, the broad factors in terms of coping styles (i.e., problem solving, blaming self, etc) could be expected to differ and may load differently to the original study because of the type of stressor that is used and the argument that coping relates to the stressor. If this were the case, then the coping styles should be expected, at least, to entail both emotion coping strategies and problem solving strategies, and notwithstanding the importance of social support, then this too may also be evident. Whatever styles or categories do result, these will be analysed to ascertain whether attributions may have any effect on their bearing.

The following appeared on the questionnaire (minus the heading for each type of strategy) with 9 point likert scales (end points: extremely unlikely to extremely likely) assessing the respondent's belief as to the likelihood they would use a particular strategy (see the questionnaire in Appendix A):

Using the scales below - based on your past experience, indicate which strategy(s) you would **most likely** adopt in order to help you cope with failing an exam.

Problem Focused (did not appear on the questionnaire)

I would bargain or compromise to get something positive from the situation.
I would concentrate on something good that could come out of the whole thing.
I would try not to burn my bridges behind me, but leave things open somewhat.
I would change or grow as a person in a good way.
I would make a plan of action and follow it.
I would accept the next best thing to what I want.
I would come out of this experience better than when I went in.
I would try not to act too hastily or follow any hunch.
I would change something so things would turn out all right.
I would just take things one step at a time.
I know what has to be done, so I would double my efforts and try harder to make things work.
I would come up with a couple of different solutions to the problem.
I would accept my strong feelings, but won't let them interfere with other things too much.
I would change something about myself so I can deal with the situation better.
I would stand my ground and fight for what I want.

Seeks Social Support (did not appear on the questionnaire)

I would talk to someone to find out about the situation.
I would accept sympathy and understanding from someone.
I would get professional help and do what they recommend.
I would talk to someone who can do something about the problem.
I would ask someone I respect for advice and follow it.
I would talk to someone about how I am feeling.

Blamed Self (did not appear on the questionnaire)

I would blame myself.
I would criticize or lecture myself.
I would realize I brought the problem on myself.

Wishful Thinking (did not appear on the questionnaire)

I would hope a miracle would happen.
I would wish I was a stronger person – more optimistic and forceful.
I would wish I could change what had happened.
I would wish I could change the way that I felt.
I would daydream or imagine a better time or place than the one I am in.
I would fantasize or wish about how things might turn out.
I would think about fantastic or unreal things (like perfect revenge or finding a million dollars) that make me feel better.
I would wish the situation would go away or somehow be finished.

Avoidance (did not appear on the questionnaire)

I would go on as if nothing has happened.
I would feel bad that I can't avoid the problem.
I would keep my feelings to myself.
I would sleep more than usual.
I would get mad at the people or things that cause the problem.
I would try to forget the whole thing.
I would try to make myself feel better by eating, drinking, smoking, taking medications.
I would avoid being with people in general.
I would keep others from knowing how bad things are.
I would refuse to believe it had happened.

The data were collated and entered into SPSS (a statistical program for the social sciences). Means and standard deviations are provided in Appendix 2. Factor analysis was the first port of call in order to establish whether the resulting factors or constructs were similar to the theorists who developed the questionnaires. Once reliable factors were established, multiple regression was used to demonstrate, if any,

the relationship among the independent or predictor variables (coping strategies and causal attributions) and the dependent variable (total stress). Further analysis tested to see if there was any difference in how males or females rated the different variables.

Results

As expected, the factor analysis using Principle Component Analysis extracted 3 coping styles that were distinct from the original measure, which had 5 coping styles. The Initial Eigenvalues for the factors were 7.2, 4.96 and 3.13 respectively, accounting for a cumulative variance of 36.41%. Using a Varimax rotation method, items were loaded into 1 of the three styles with a cut-off of .4. The first coping style was made up of 12 items and was labelled Emotion Coping (Reliability Alpha .88). This measure consisted of items that stated for example, "I would fantasize or wish about how things might turn out," "I would get mad at the people or things that cause the problem," and "I would hope a miracle would happen." The second coping style was made up of 16 items and was labelled Problem Solving (Reliability Alpha .85). Some example items of this measure are "I would bargain or compromise to get something positive from the situation," "I would make a plan of action and follow it," and "I would change something so things would turn out all right." The last style consisted of 9 items and was labelled Seek Social Support (Reliability Alpha .75). This style consisted of, for example "I would ask someone I respect for advice and follow it," "I would talk to someone about how I am feeling," and "I would *not* keep my feelings to myself."

In order to test the main hypothesis, a composite attribution score was formed from the Locus, Stability, and Controllability ratings, such that high scores indicated more external, stable, and uncontrollable attributions. Specifically, the controllability and locus factors were reversed to establish uncontrollability and externality, and then

they were added to the stability factor, thus creating the maladaptive attribution.[1] When this variable was paired with the stress measure, a significant and positive, albeit small relationship was yielded (.19, $p<.05$). In addition, as expected, there was a significant negative relationship produced when the maladaptive attribution score was paired with the coping strategy, seeking social support (-.16, $p< .05$). The hypothesis was confirmed in that those who perceived the causes of the exam failure to be external, stable, and uncontrollable were more likely to report high levels of stress and less likely to rally social supports.

The coping strategies, as expected, generally related to the total stress reported. Table 1 shows the correlations between coping styles and total stress. In sum, all the three coping styles accounted for 17.6% of the variance in total stress. When using multiple regression, the standardized coefficients increased slightly from the reported correlations (Emotion coping to .361 and Social coping to .226, both $p < .01$). Although the causal sequence is not clear, the results suggest that as the stress levels increased, then the respondents were more likely to adopt both emotional coping and social support strategies.

Table 1. Shows the correlations between the coping styles and total stress.	
Emotion Coping	.344**
Problem Coping	.035
Seeking Social Support	.225**
**p <.01 one tailed.	

The causal dimension stability significantly correlated with both emotional coping and seeking social support. Table 2 shows the correlations between

[1] Three factor principle component factors were extracted for the attribution rating scales and rotated by Varimax procedures to simple structure. The factor structures of the scale corresponded to Russel's (1982) structure, although item 4 had to be reversed in order to establish internal reliability on the controllability subscale.

attributions and coping strategies. Stability correlated positively with emotional coping and negatively with seeking social support. This would suggest that as the respondents' considered the causes to be more stable, then they would require more of an emotional coping strategy, unlike those seeking social support, who would utilise this strategy if the causes appeared to be more unstable.

Table 2. Shows the correlations between causal attributions and the coping strategies.

	Emotional Coping	**Problem Focused Coping**	**Seeking Social Support**
Locus of Causality	.067	-.067	.12
Stability	.217**	-.056	-.205**
Controllability	.083	-.118	.075

**p <.01.

Due to the significant findings with the stability causal attribution, further analysis investigated whether stability moderated the relationship between stress and any of the coping strategies. A median split was performed on the stability dimension, resulting in high stability and low stability (stable or unstable). When comparing the correlations between total stress and seeking social support for both the high (.09) and low (.41) stability groups, there was a significant difference in the correlations ($p < .01$). Notably, there is a positive and significant relationship between total stress and seeking social support for the low stability group, whereas the high stability group yielded a very small relationship. Figure 4 shows the relationship between total stress and seeking social support for both high and low stability. These findings show that the causal attribution stability moderated the relationship between total stress and seeking social support. This means that, as the causes were perceived to be less stable, seeking social support was a favourable option when stress levels were high, unlike those who ascribed more stable causes, whereby seeking social support seemed a less viable option in the face of heightened stress. There were no other significant moderations.

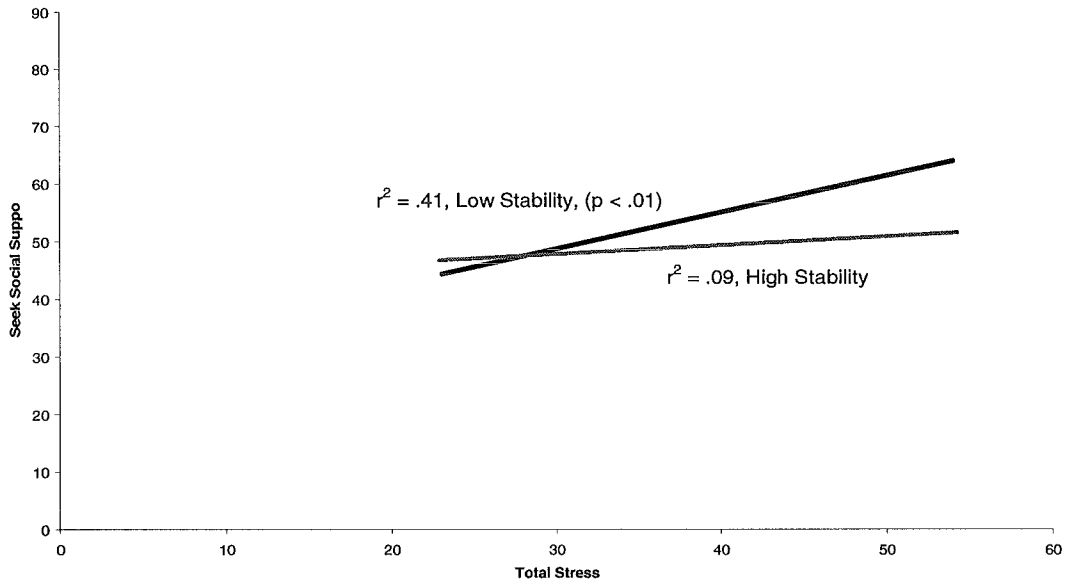

Figure 4. Shows the relationship between total stress and seeking social support for both high and low stability.

There were significant gender effects. Women on average, responded that they would be more stressed than males, $t(186) = 2.06$, $p<.05$), that they would be more likely to seek social support, $t(186) = 2.95$, $p<.01$, and that they would be more likely to adopt a problem coping strategy $t(186) = 2.194$, $p<.05$.The effect sizes of each of the differences are small, thus indicating weak power. Although it is not significant at the alpha level of .05, females reported the causes to be less stable, $t(186) = 1.884$, p=061. Table 3 shows the male and female means, confidence intervals, and standard deviations for each of the variables measured.

In general, the causal attributions related to the total stress reported. Table 4 shows the correlations between causal attributions and total stress. Further regression analysis was performed to disentangle the influences of the correlated predictors or causal attributions. The analysis pitted the attribution scores against each other by simultaneously entering them into regression analysis and then removing each predictor to ascertain unique variance and coefficient scores. Table 5 shows the

standardised coefficients for total stress and each causal attribution. Regression analysis yielded results demonstrating that some co-variation was evident in the first reported correlations; that is, the relationships between total stress and causal attributions reduced and/or were not significant. When analysing the variables individually, stability accounted for the most variance (2.4%), locus of causality (LOC) was almost as high (2%), and control did not even account for 1% of the variance in the stress reported. In sum, control, stability, and locus of LOC accounted for 5.3 % of the variance in the reported stress. From these results, it is evident that the coping styles had more influence on the reported stress levels than did the causal attributions.

Table 3. Male and female's descriptive variables for their stress, attribution, and coping scores.

				95% Confidence Interval for Mean	
Variable	**Gender**	**Mean**	**Std. Dev.**	**Lower Bound**	**Upper Bound**
Total Stress*	Male	42.30	6.75	40.96	43.65
	Female	44.40	7.23	42.88	45.93
LOC	Male	18.17	4.37	17.30	19.04
	Female	18.24	4.17	17.36	19.11
Stability	Male	10.56	3.94	9.77	11.34
	Female	9.52	3.58	8.76	10.27
Control	Male	12.79	3.031	12.18	13.39
	Female	13.31	2.661	12.75	13.88
Emotional Coping	Male	64.67	19.90	60.70	68.64
	Female	67.60	18.37	63.73	71.47
Problem Coping*	Male	92.92	18.56	89.22	96.62
	Female	98.62	16.87	95.06	102.17
Social Support	Male	51.03	11.60	48.72	53.34
	Female	56.04	11.71	53.58	58.51

Note: * = p<.05.

Table 4. Shows the correlations between causal attributions and total stress.

Locus of Causality (LOC)	-.142*
Stability	.154*
Controllability	.08

* p <.05 one tailed.

Table 5. Shows the causal attribution's and total stress standardized coefficients when simultaneously entered into regression analysis.

	Beta	**Sig.**
Locus of Causality	-.143	.058
Stability	.143	.055
Controllability	.134	.072

The above results, which are considered rather poor in any sense, are not surprising when each attribution score was tested for internal reliability. The highest reliability alpha was yielded by LOC (Alpha = .78), then stability (Alpha = .57), and disappointingly, control succumbed a very small alpha (Alpha = .37). Notably, this last alpha was only obtained when scores had been reversed. In the first instance, corrected item total correlations demonstrated that some respondents had answered in reverse order on the likert scales. For example, question 9 of the attribution scale asked "Is the cause(s) something for which: no one is responsible or someone is responsible" produced a negative correlation as compared to its counterpart question 2, which produced a positive correlation when asking if the cause was controllable or not. Notably, the scale from the former question went from 1 to 9 on the likert scale, unlike the latter question mentioned, which went from 9 to 1 (see Appendix 1 for a copy of the questionnaire).

Discussion

The hypothesis, which stated that respondents' external, stable, and uncontrollable attributions would positively relate to the respondents' psychological stress level and negatively relate to seeking social support, was supported. Despite the small correlations, their directions nevertheless reinforce the idea that when failing an exam, perceptions of causes that are more inclined to include the composite of: (1) an external locus; (2) an uncontrollable tendency; and (3) are stable or likely to occur time and time again, relate to higher levels of psychological stress. Moreover, in response to the stress, coping is less likely to involve the rallying of social support.

Implicit in the findings are coping measures that are unlike previous research, which too utilised the Revised Ways of Coping Checklist (RWCC) (Vitaliano, et al., 1985). This research for example, resulted in three coping strategies, which were suitable labelled Problem Focused, Emotion Focused, and Seeking Social Support. When pairing these coping strategies against stress, as expected the variability in the reported stress is at least partially a function of peoples' coping. Specifically, there was a positive relationship between the stress level and both Seeking Social Support (.23) and Emotion Coping (.34). Whether an increase in reported stress meant that respondents were more likely to seek social support and adopt emotional coping, or utilising these coping strategies meant an increase in stress, is not clear from the relationship. When one considers the question that was asked however, namely "how would you cope with failing the exam" and the order in which the questions were asked, it is reasonable to assume that the coping strategies would be employed in response to the stress, thus suggesting that the stress resulting from failing an exam would likely lead to more emotion focused and social support strategies.

The relationship between coping and attributions was not as successful however. Only small significant correlations were reported between the causal dimension stability and both the coping strategies - emotion coping (.22) and seeking social support (-.21). This would suggest that as the causes of the stress were considered more stable, then more of an emotional coping strategy would be utilised, and for the social support, then this is more likely to be sought if the causes are considered less stable. In fact, this last relationship is strengthened by the results that found the causal attribution stability to moderate the relationship between total stress and seeking social support. In other words, those who considered the causes to be less stable were more likely to seek social support if the stress was high than those who reported the causes to be more stable. Therefore, if the causes of the heightened stress appear to be unpredictable (unstable), then it would seem likely that seeking social support is a favourable coping strategy, especially when the stressor is the failure of an exam.

Although this research was not concerned with gender differences, some interesting differences have been found. First, females believed that they would feel more stressed than the males when failing an exam. Second, females more than males believed that they would adopt more of a problem solving strategy and were more likely to seek social support if they had to cope with failing an exam. Last, although not significant at the alpha level of .05, females believed the causes to be less stable than the males. These findings will be discussed in more detail later in the chapter.

Generally, the attributions unexpectedly accounted for a small percentage in the reported stress variability (5%). Locus of causality produced a negative, albeit small relationship with stress (-.14). Stability (.15) and controllability (.08) generated small

positive correlations. Multiple regression analysis, which accounts for the variability produced from other variables, modified the correlations and resulted in insignificant findings at the alpha value of .05. It was expected, that the controllability should at least account for some significant variance in the stress reported due to previous research that infallibly linked stress to controllability (e.g., Compas, et al., 1988a; Forsythe & Compas, 1987; Krohne, 1986; Miller, 1979b; Suls & Mullen, 1981a, 1981b).

The poor findings could be attributed to the fact that the measure was not internally reliable. Using reliability analysis, in the first instance the control measure produced a negative correlation. Factorial analysis demonstrated that question 9 resulted in a negative correlation with its pairs, suggesting that in the main, respondents had answered this question in reverse. When the item scores were reversed, reliability analysis produced a positive, stronger reliability coefficient, notwithstanding that it was still small (.3 when .7 is considered respectable). This result seemed odd when one considers that an average Chronbach's alpha coefficient of .81 has been reported from other analytic investigations (Amirkhan, 1998). Nevertheless, Russel (1982) makes note that "a variety of other factors may influence responses to the Causal Dimension Scale in actual achievement settings, which could adversely affect the validity of the measure" (p. 1143). What these factors could be has yet to be established.

General Discussion

The Present Research

This research was concerned with causal attributions and their relationship with both psychological stress and the coping strategies in response to such stress. This type of research is not completely novel in that previous investigations have revealed a causal sequence in which attributions affected distress both directly and by influencing the choice of coping strategy (Amirkhan, 1998). The aim of this study was not to replicate this link between attributions and distress, but to ascertain if attributions were in the first instance, related to psychological stress or in other words, influencing the perceived threat of an ostensibly stressful situation. In addition, do these attributions effect how coping will be utilised in response to the threat? Indeed, the results confirm that the perception of threat is increased when a stressor is appraised as having been caused by uncontrollable, stable, and external factors. That is, a positive, albeit small correlation demonstrated that psychological stress increases when such a maladaptive causal attribution is cognised. Moreover, this inhibits the utilisation of seeking social support in response to the threat, demonstrated by a negative correlation that was also yielded.

Despite the significant results that were obtained for the above results, both stress and seeking social support yielded small correlations with the maladaptive causal attribution (.19 and -.16 respectively, $p<.05$). One possible reason for small correlations is the reliability of the attribution measure; that is, as previously mentioned controllability produced poor internal reliability results thus additionally questioning its validity. Although, 3 factor principle analysis produced 3 simple factors that corresponded to Russell's results, hence suggesting that the measures

were perhaps valid. The point is, the correlations were small, but the directions and their significance demonstrates the likelihood that appraisals involving causal ascriptions of a certain characteristic are contributing to the outcome of a stressful situation – such as failing an exam.

The results that were obtained involved a re-factoring of the coping measure. The RWCC coping measure originally had 5 factors, problem solving, seeking social support, wishful thinking, blaming the self, and avoidance, which were invalid in this study as only 3 factors were produced from factorial analysis. As expected, the three factors were problem solving, emotion focused coping, and seeking social support. When analysing the items that made up seeking social support, it is evident that they too relate to emotion-focused coping. That is, respondents believed they would seek others help for emotional or sympathetic reasons as opposed to asking for help to change the environment. The problem solving strategy was not necessarily characterised by items that exercise action to alter or change the immediate outcome, but possibly lead to actions that would alter or change future examination attempts, for example, "I would make a plan of action and follow it."

The above findings demonstrate the validity of the contextual model insofar as they emphasise the point that coping is best defined in relation to the situation. There is no doubt that people have preferred ways of dealing with situations, and this research does not disprove such an idea. In fact, by asking people how they would or should cope, as was the case in the present research, one may then argue that I have only governed respondents' coping style, not what they would actually do in response to a specific stressor. I am not disputing such an argument, but the context will characterise the most applicable coping strategy, notwithstanding the people

appraisals that will add variation in any applicable strategies. Such variation in coping is partly accounted for by the causal attributions that people make; in particular, the findings suggest that causal stability was a significant predictor of both emotion-focused coping and support seeking.

Previous research has demonstrated that attributions are better predictors of solutions for the management of the problem as opposed to the problem itself. Basically, the "problem" in this research was the failure of an exam and the attributions proved generally to be better predictors of coping with the problem than the level of psychological stress resulting from the problem. This is demonstrated by the findings that show a significant relationship between attributions and coping and an insignificant relationship between the attributions and stress.

The significant relationship consists of the causal dimension stability negatively correlating with seeking social support, which suggests that the respondents would seek social support if the causes of the exam failure were considered to be less stable. When considering previous research that demonstrates failures are typically ascribed as unstable (e.g., effort) and active efforts to resolve or manage the problem are more likely to follow when the cause of the problem is considered unstable (Kovenklioglu & Greenhaus, 1978; Weiner, 1985, 1986), then it is not surprising that an instrumental coping strategy like seeking social support would be utilised. One reason is that, an unstable attribution like effort enables the attributor to protect their ego or self-esteem, thus enabling them to approach others with a good sense of self, which for all intents and purpose is unlikely to happen if one considers themselves to have low aptitude (stable attribution).

Further support is demonstrated in the current findings whereby the causal attribution 'stability' moderated the relationship between stress and seeking social support. First, the stress from failing an exam is negative affect due to the non-attainment of a goal. In line with Weary's (1980) theory, self-protective attributions function to alleviate high levels of negative affect to increase feelings of egotism or serve a threat-reducing purpose. Unstable attributions for example, are able to reduce negative affect because again, they relate to effort and not the person's aptitude. This defensive mechanism increases the likelihood that social support will be sought when stress is high. In other words, it is possible that respondents' who made unstable attributions believed they could ask for help when stressed because they could explain their failure as being a result of effort and not aptitude, thus not seeing the situation as a further threat to his or her self-concept.

Overall, the coping strategies have won the day by demonstrating their superiority in predicting stress levels when pitted against attributions. Basically, the variation in the reported stress was better predicted by the coping strategies than the causal attributions. There was a positive relationship between stress and both emotion-focused coping and seeking social support. Specifically, the emotional coping strategy consisted of items that related to wishful thinking. For example, "I would fantasize or wish about how things might turn out," "I would get mad at the people or things that cause the problem," and "I would hope a miracle would happen." Given that the stressful situation was the failure of an exam, it is therefore not surprising that respondents believed they would fantasise or wish for a different outcome because an important goal had been thwarted. With regards to seeking social support, this measure also consisted of items that relate to emotional regulation. For example, "I would talk to someone about how I am feeling," and "I would not keep

my feelings to myself." On the one hand, emotional regulation seemed to be underpinning how respondents believed they would cope with the exam failure or the outcome, whether this meant fantasising about a different outcome or seeking sympathy. On the other hand, findings also yielded a problem solving strategy and though it did not correlate with the reported stress level, it nevertheless focused on reducing the recurrence of the outcome or future stress. For example, "I would make a plan of action and follow it," and "I would change something so things would turn out all right" are items that lead to a possibly different outcome when the respondent participates in future exams.

The question then becomes, is this type of coping response considered effective? When considering the fact that students were asked how they would cope with the exam failure, which for all intents and purpose is an immediate response to the stressor, an emotional coping strategy would seem more appropriate than an immediate problem solving strategy because the situation is not amenable to change – the student failed the exam (past tense) and there is no changing this outcome. This is not true for future occurrences however, so taking some action to reduce the likelihood of future reoccurrences seems wise; applying some volition or control over the situation may be fitting in this sense. Seemingly, the respondents in this research generally have a good fit between situational appraisals of changeability and actual coping processes due to the type and utilisation of both emotion-focused strategies and problem focused strategies, thus suggesting an increase in the possibility for the management or reduction of distress. Overall, the resulting taxonomy highlights the important idea that when faced with stress, both instrumental and palliative strategies operate in unison to facilitate adaptation.

So far, the main hypothesis that expected the attributions to relate to both stress and the coping strategies has been elaborated. For instance, the specific hypothesis that predicted a maladaptive causal attribution to positively relate to stress and negatively relate to seeking social support was supported. Implicit in these findings is the fact that the maladaptive attribution is characterised by a stable attribution and results demonstrate that this causal dimension negatively correlates with seeking social support; that is, stable ascriptions for failure inhibit the seeking of social support. This may be so because failures attributed to stable ascriptions are characterised as ego threatening, thus reducing any participation in situations that are conducive to decreasing self-esteem (e.g., social interaction). On the other hand, the individual attributions were poor predictors of the stress level, so clarifying which dimension is conducive to increased stress is difficult, although previous research pinpoints the uncontrollable dimension as increasing stress levels. Therefore, when explicating the individual attributions' predictive significance, results show they are greater predictors of how a person will manage or *cope* with the stress as opposed to the actual *level* of psychological stress.

In fact, the coping strategies were better at predicting the stress level than the attributions. This is not surprising when one considers that coping relates to stress and its primary function is to manage or reduce stress. Whether the coping strategies employed by the respondents are in fact palliative in this type of situation has not been investigated in this study. If this was to be done, then temporal considerations would have to be considered because not only would the coping change as the situation unfolded, but new demands may ensue more stress (e.g., the availability of social support).

What is interesting nevertheless, is the fact that the coping strategies are contextual or have been defined by the stressor. For the most part, this supports Folkman and Lazarus's cognitive-relational model that emphasises the cognitive and behavioural efforts that *change* in order to manage *specific* demands (Lazarus & Folkman, 1984). The specific demand in this case was the failure of the exam and the factorial analysis that was performed on the coping measure used in response to this demand shows that the simple coping structures were different to what the original measure expected. This is not to say that the original measure is invalid or unreliable, but what is pertinent to research investigating coping is the fact that the specific demand or the context will be a considerable influence on the resulting coping structures or characteristics.

I say a "considerable influence" because obviously people appraisals and biological factors are concomitant with the context. For example, the findings show that the sex or the gender of the respondent influenced the stress level, the stable ascriptions, and the amount of problem-focused coping that would be utilised. These gender differences were not hypothesised, so next I will discuss why these gender effects may have been yielded.

Gender and Stress

First, females reported that they would be significantly more stressed than their male counterparts. Barnett, Biener, & Baruch, (1987) are the editors of a book that attempts to unearth the reasons why women report more stress and stress related symptoms than do men. For example, one chapter looks at the different roles that males and females adopt because of the idea that women are, perhaps the more emotional gender of the two. In essence, this is the social expectation; women are

more caring, emotional and are obligated to respond to the needs of others (Lueptow, Garovich Szabo, & Lueptow, 2001; Wethington, McLeod, & Kessler, 1987). In other words, females are significantly more affected emotionally by life events and such vulnerability accounts for the relationship between gender (females) and psychological distress (Kessler, 1979). For example, in one study that measured self-esteem, results show that adolescent women were more concerned with body image and were more influenced by media than their male counterparts, and not to mention that there was a significant difference in emotional expression, with boys becoming more restrictive across adolescence (Polce Lynch, Myers, Kliewer, & Kilmartin, 2001).

Considering the fact that more women are entering the work force, it could be expected that they have as many, if not more demands to cope with than their male counterparts. Traditionally, wives were more inclined to appease their husbands, beckoning to every need and sufficing their conjugal expectations. Given that in such circumstances, the husband was the proverbial "bread winner," a certain amount of control underlined this marital role, which meant that males were less stressed than their wives (Barnett & Baruch, 1987). Moreover, as females adopted more non-traditional roles, their depression levels dropped, presumably from the relative gain in power. Although this shift in the balance of control may provide strain on the father or husband role due to their loss of power, females may also find this taxing because their well being has been more closely related to the quality of their marital role (Barnett & Baruch, 1987). However, despite these social changes that may govern the family politics, sex typing has not followed suit whereby there are "still gendered differences based on genetic patterns evolved from adaptations to differing reproductive challenges of early males and females" (Lueptow, et al., 2001, p.1). In

other words, males and females have to cope with demands that are distinguished by their genetic makeup and for women, this means coping with more changes in adolescence than what males have to endure.

Are women more emotional than men? The popular belief is that, indeed, women are described as more emotional than men. When social context is disregarded, and emotionality is defined as a global disposition that is stable over time, then women consistently describe themselves as more emotional than do men (Barrett, Robin, Pietromonaco, & Eyssell, 1998). It is noted however, that the problem with retrospective descriptions is the reconstructive process that is used to recall such information. Broadly speaking, recollections are inaccurate because heuristics, cognitive structures, implicit theories, and motivations may bias memories of past events. For example, when recalling their experiences, men might think, "I am a man, and men are not emotional, therefore I must not be emotional", whereas women might think, "I am a women, and women are emotional, therefore I must be emotional". Although women describe themselves as more emotional than their male counterparts when retrospective global ratings are used, momentary ratings have failed to show the same sex differences (Barrett, et al., 1998).

Overall, the above findings point to the idea that social expectation brings forth for females a susceptibility to report more emotion, which may account for the differences in reported stress. Notably, this research used self-report measures that asked respondents to rate their beliefs as to how much stress they would feel and indeed, women could have rated higher because they are susceptible to reporting more emotion, whereas the males may have been more restrictive in their reports. Had this research used momentary measures that focused on participants' arousal levels,

maybe then the differences could have been reduced. On the other hand, due to females having a 'vulnerability' to feel more emotion, then this psychological precursor may in turn lead to physiological affect thereby influencing their arousal levels. Or, perhaps females' biology and the changes that occur in adolescence are affecting their arousal level, which then leads to psychological affect. Better yet, it is not sensible to distinguish such factors or make inferences as to which factor is preceding any affect but to realise that all factors are interrelated and not mutually exclusive.

Gender and coping

Given the fact that women are stereotyped as the more caring and emotional of the two sexes, it is therefore not surprising to find that women provide more frequent and more effective social support than do men (Bell, 1987). However, despite their empathetic nature, women are predisposing themselves to the "contagion of stress that is felt when troubling life events afflict those to whom they are emotionally close" (p. 267). Moreover, Sherman and Walls, (1995) found that social support is a potent variable for females in perception of both stress and symptoms but essentially unrelated for males. Likewise, Ptacek, Smith, & Dodge, (1994) found that women reported seeking social support and using emotion-focused coping to a greater extent than men, whereas men reported using relatively more problem-focused coping than women. The findings from this current thesis also demonstrate that women more than men, are more likely to seek social support when coping with a stressor such as failing an exam. Unlike any other research though, women reported that they would utilise more of a problem-focused strategy than men would.

In other words, females were more likely than males to make a plan of action and change something so things would eventually turn out all right. In addition, the results show that females were more likely to make unstable ascriptions as to the cause of the exam failure, whereas the males were more likely to make a stable causal attribution (the difference here between the males and females was significant at the p = .61). It could be argued that the females believed more than males that they could take control of the likelihood of future occurrences of the outcome, thus demonstrating that they are not as helpless as the males may appear to be. In fact, other research in the academic arena has clearly found that boys showed more helpless behaviour as assessed by the teacher, than did girls, while on the other hand girls reported more psychological maladjustment (Valas, 2001). Another study that investigated mathematical problem-solving behaviour, found that girls had higher persistence than did boys during applied problem solving (Vermeer, Boekaerts, & Seegers, 2000). Meece and Courtney, (1992) examined sex differences in achievement perceptions with emphasis on mathematics and postulate that sex differences result in part from students' expectations of success and the perceived incentive value of the task. More recent research found that girls outperformed boys on the Planning and Attention scales of the Cognitive Assessment System (Naglieri & Rojahn, 2001). And closer to home, Fergusson and Horwood (1997) in a longitudinal study found: (1) males achieved less well than females; (2) differences in educational achievement could not be explained by gender differences in intelligence since boys and girls had very similar IQ test scores; and (3) the higher rate of educational under-achievement in males could be explained by gender related differences in classroom behaviors with males being more prone to disruptive and inattentive classroom behaviors that appeared to impede male learning. It is concluded that the traditional

educational disadvantage shown by females has largely disappeared and has been replaced by an emerging male disadvantage.

In light of these findings, it could be expected that females will indeed be more attentive to future achievement outcomes, especially when coping with failing an exam. While acknowledging that failure is more likely to elicit causal attributions, the causal ascriptions were more unstable for females than males, thereby reducing any expectation for females that such a failure will happen again. So, with females being more attentive and believing they could expect a different outcome, problem-focused coping strategies pertaining to planning and changing future outcomes is not only efficacious, but is objectively a fitting response to failing an exam for those who want educational achievement. This is not always adaptive however, as over expending energy can lead to more distress when efforts result in futility, and can result with psychological maladjustment.

There appears to be a fine line between adaptive and maladaptive coping strategies. What distinguishes the two is whether one exerts effort and how much effort is exerted to alter the situation when it is amenable to change. This relates to the following saying by an anonymous author:

> God grant us the courage to change the things that need changing, the serenity to accept the things we cannot change, and the wisdom to know the difference.

The above statement implies that both problem-focused strategies (change the things that need changing) and emotion-focused strategies (serenity to accept the things we cannot change) are available. The wisdom is being able to use them effectively.

If a person is stressed, then his or her coping strategies are ineffective. Ineffective coping in the contextual model, relates to a poor fit between a person's

appraisals of the demand and/or available resources to meet the demand. As this research points out though, the appraisal process is complex and is characterised by a myriad of factors that are precipitating any felt stress, for example, the causal attributions of the stressor. As a result, a good fit between the demands and one's appraisal's requires a sense of emotional intelligence - an awareness of one's thoughts, feelings, and physical and behavioural reactions and exerting appropriate control over them. "The component coper is no more able than the deficient one to completely avoid potentially stressful situation, but his [sic] mental preparedness for the possibility, his differentiated appraisal of events (internal and external) and his broad repertoire of coping techniques allow him to respond in a manner that maximizes impact and minimises strain" (Roskies, 1983, p. 277).

Shortcomings of this Research

When adopting others' measures for research, there are certain assumptions that must be made. That is, one may expect that, based on previous research, the measure is both reliable and valid. Implicit in this expectation is the idea that published measures will not require any alteration. And rightly so, such published measures advertise their internal consistency and validity, explicating the notion that over various platforms the results support their hypotheses thereby confirming their simple dimensional structures. It is not until numerous hours have been spent and the actual data are collected, that the bewildered researcher realises that the measures contravene some assumptions; that is, once analysed, the measures are in fact unreliable. This is not always the case however, but certainly is a shortcoming of this research. For example, Russell's Causal Dimension Scale yielded a poor internal reliability on the controllability dimension. Only after reversing some of the items, did a positive and

more reliable alpha result. Any future research that utilises this measure would be advised to have the individual items rated in a consistent fashion (e.g., from 1 to 9 for all items) so that the less observant participant does not inadvertently score opposite to their implicit intentions - although, this may lead to a response bias. Alternatively, each dimension may need to have its items listed in the same direction, with a switch between one of the dimensions (e.g., all the controllability items listed from 1 to 9 and the stability and locus items listed from 9 to 1). Albeit, a mixture of both methods would demonstrate if a concern with the items does indeed exist.

Another possible shortcoming is in the design. A questionnaire was used to obtain participants' attitudes as to how they believed they would respond to a specific stressor. Attitudes and behaviour are predictably related in that attitudes influence action, though the relationship is not a perfect correlation. That is, a person may say one thing, and yet do another. On the other hand, actions influence attitude; that is, given the right conditions, a person's actions can change their attitude, thus bringing their attitude into line with their actions (e.g., cognitive dissonance theory). The point is, by asking participants to self-report, there is a possibility that they will show an experimental bias, thus not answering veridically, but in a fashion that they believe will produce the desired effect.

Possibilities for Future Research

Where to from here? Perhaps further research could use the current questionnaire with minimal alterations (taking into account the above comments on the causal attribution measure) and recruit participants on the basis that they have failed or performed poorly on exams or assignments. Such research could investigate retrospective accounts of behaviour and compare if they do indeed reflect attitudes.

Each respondents' Grade Point Average could additionally provide an objective measure of performance and the inclusion of an "after affect" measure (i.e., how each person felt after they had coped with failing an exam) would see how well respondents actually coped; that is, if their distress was reduced as a result of their coping. The present research however, did not measure emotion because if you asked someone how they *believed* they would feel after they coped, it would seem that a respondent would be ostensibly biased; common sense would have it that it would be atypical for a person to rate a coping strategy that they *believed* was ineffective. The "after affect" measure, may relate both directly and indirectly to the causal attributions (Amirkhan, 1998). This research found that a particular belief pattern inhibited certain coping strategies that may be considered apt in the face of adversity like failing an exam. If future research determined that there are some retrospective reports of troubling behaviours, like pessimistic causal attributions, which are undermining coping and future outcomes, then such research could reinforce the idea that there is a pattern of thinking that is maladaptive in response to setbacks like failing an exam.

Concluding Comments

This research used self-report to determine how subjects in the context of a particular stressful encounter, believed they would appraise a stressor with regards to its threat, its causes, and what coping strategies they would utilise in response. As Folkman & Lazarus (1985) point out, the problem is not that self-report is not as effective as other methods of inquiry – in fact, for certain kinds of psychological processes it may be the only way to obtain certain information – but rather that it eventually requires verification by other methods such as observation of direct

behaviour and physiological assessment. In saying that, this research was only concerned with participants' beliefs because as Lazarus has repeatedly emphasised, stress lies in the eye of the beholder as much in the external event itself; it is the individual's *evaluation* of the demands of a given situation as well as of the resources available to meet these demands that determines whether the situation will call forth a stress response (Lazarus, 1966). In this instance, asking people how they appraise a potentially stressful situation brings to light the mental processes that are undermining peoples' adaptive functioning and exemplifies that thinking is influencing a person's well-being.

Finally, the results of this study support the importance of the contextual definition of coping in response to stress. Each stressful encounter will call forth its own particular coping responses, thus suggesting that people are better equipped when they have a repertoire of coping resources to combat stress. It could be expected that when faced with an alternative stressor, then a different set of coping structures would result, notwithstanding the causal attributions that too may be different. Considering that it has been shown that very negative and unexpected failures are those most likely to elicit attributional searches (Wong & Weiner, 1981), then there is no certainty that cognitive structures during the stress process will necessarily contain attributional schemas. Therefore, it is noteworthy to point out that the context – this being the interaction between the individual and the environment will ultimately determine both the covert and overt behaviours. The final word is though, that the person brings to any context their thinking – a friend or foe – the difference between stress and homeostasis.

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Appendix A.

Questionnaire for Jay Mclean's Thesis Project

Welcome and thankyou for participating in my Masters in Arts thesis project. The University of Canterbury ethics committee has approved this research. Please be aware, nevertheless, that your name or any other details that lead to your identification are not required - you will remain completely anonymous. In addition, you are under no obligation to participate; your involvement is voluntary. However, by completing this questionnaire, it is understood that you consent to the following information to be used for the purpose that is intended, namely for my MA research.

Part I

1. What is your age in years? ----------

2. What is your gender, male (M) or female (F)? ----------

Part II

Instructions: Imagine that you have just received a grade for an important mid year exam for one of your major papers. Unfortunately, you have failed. The items below concern the level of stress that may result from such a situation. Circle one number for each of the following scales.

1. How stressed would you be in this situation?

Not at all stressed	1	2	3	4	5	6	7	8	9	Extremely stressed

2. How anxious would you become in this situation?

Not at all anxious	1	2	3	4	5	6	7	8	9	Extremely anxious

3. How unpleasant would this situation be?

Not at all unpleasant	1	2	3	4	5	6	7	8	9	Extremely unpleasant

4. How frustrated would you be in this situation?

Not at all frustrated	1	2	3	4	5	6	7	8	9	Extremely frustrated

5. How much worry would this situation cause you?

No worry at all	1	2	3	4	5	6	7	8	9	Extreme worry

6. How irritated would you be in this situation?

Not at all irritated	1	2	3	4	5	6	7	8	9	Extremely irritated

Part III

Instructions: Think about the reason or reasons why you may have failed the exam. The items below concern your impressions or opinions of the cause or causes of your failure. Circle one number for each of the following scales.

1. Is the cause(s) something that:

Reflects an aspect of yourself	9	8	7	6	5	4	3	2	1	Reflects an aspect of the situation

2. Is the cause(s):

Controllable by you or other people	9	8	7	6	5	4	3	2	1	Uncontrollable by you or other people

3. Is the cause(s) something that is:

Permanent	9	8	7	6	5	4	3	2	1	Temporary

4. Is the cause(s) something:

Intended by you or other people	9	8	7	6	5	4	3	2	1	Unintended by you or other people

5. Is the cause(s) something that is:

Outside of you	1	2	3	4	5	6	7	8	9	Inside of you

6. Is the cause(s) something that is:

Variable over time	1	2	3	4	5	6	7	8	9	Stable over time

7. Is the cause(s):

Something about you	9	8	7	6	5	4	3	2	1	Something about others

8. Is the cause(s) something that is:

Changeable	1	2	3	4	5	6	7	8	9	Unchanging

9. Is the cause(s) something for which:

No one is responsible	1	2	3	4	5	6	7	8	9	Someone is responsible

Part IV

Instructions: Think about how you would cope with failing an important exam. The items below concern your likely coping responses. Circle one number for each of the following scales to indicate how likely you would adopt each strategy.

1. I would bargain or compromise to get something positive from the situation.

Extremely unlikely	1	2	3	4	5	6	7	8	9	Extremely likely

2. I would concentrate on something good that could come out of the whole thing.

Extremely unlikely	1	2	3	4	5	6	7	8	9	Extremely likely

3. I would try not to burn my bridges behind me, but leave things open somewhat.

Extremely unlikely	1	2	3	4	5	6	7	8	9	Extremely likely

4. I would change or grow as a person in a good way.

Extremely unlikely	1	2	3	4	5	6	7	8	9	Extremely likely

5. I would make a plan of action and follow it.

Extremely unlikely	1	2	3	4	5	6	7	8	9	Extremely likely

6. I would accept the next best thing to what I want.

Extremely unlikely	1	2	3	4	5	6	7	8	9	Extremely likely

7. I would come out of this experience better than when I went in.

Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

8. I would try not to act too hastily or follow any hunch.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

9. I would change something so things would turn out all right.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

10. I would just take things one step at a time.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

11. I know what has to be done, so I would double my efforts and try harder to make things work.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

12. I would come up with a couple of different solutions to the problem.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

13. I would accept my strong feelings, but won't let them interfere with other things too much.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

14. I would change something about myself so I can deal with the situation better.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

15. I would stand my ground and fight for what I want.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

16. I would talk to someone to find out about the situation.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

17. I would accept sympathy and understanding from someone.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

18. I would get professional help and do what they recommend.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

19. I would talk to someone who can do something about the problem.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

20. I would ask someone I respect for advice and follow it.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

21. I would talk to someone about how I am feeling.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

22. I would blame myself.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

23. I would criticize or lecture myself.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

24. I would realize I brought the problem on myself.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

25. I would hope a miracle would happen.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

26. I would wish I was a stronger person – more optimistic and forceful.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

27. I would wish I could change what had happened.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

28. I would wish I could change the way that I felt.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

29. I would daydream or imagine a better time or place than the one I am in.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

30. I would fantasize or wish about how things might turn out.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

31. I would think about fantastic or unreal things (like perfect revenge or finding a million dollars) that make me feel better.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

32. I would wish the situation would go away or somehow be finished.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

33. I would go on as if nothing has happened.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

34. I would feel bad that I can't avoid the problem.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

35. I would keep my feelings to myself.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

36. I would sleep more than usual.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

37. I would get mad at the people or things that cause the problem.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

38. I would try to forget the whole thing.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

39. I would try to make myself feel better by eating, drinking, smoking, taking medications.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

40. I would avoid being with people in general.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

41. I would keep others from knowing how bad things are.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

42. I would refuse to believe it had happened.
Extremely unlikely 1 2 3 4 5 6 7 8 9 Extremely likely

Thankyou for helping me with my thesis, I truly appreciate your contribution.

Appendix B.

Descriptive Variables.

Table 6. Shows the minimum, maximum, mean, and standard deviation for all the variables used in the present research.

Variable	Minimum	Maximum	Mean	Std. Deviation
Age	17	54	24.13	7.10
Gender	0	1	.47	.50
Stress1	3	9	7.21	1.43
Stress2	2	9	7.07	1.51
Stress3	1	9	7.40	1.52
Stress4	2	9	7.34	1.43
Stress5	2	9	7.11	1.47
Stress6	2	9	7.16	1.55
Total Stress	23	54	43.30	7.03
Attr1	1	9	5.93	1.81
Attr2	1	9	6.50	1.80
Attr3	1	9	3.74	1.88
Attr4	1	9	6.52	1.86
Attr5	1	9	6.03	1.63
Attr6	1	9	3.57	1.74
Attr7	1	9	6.25	1.67
Attr8	1	8	2.74	1.54
Attr9	1	9	6.52	1.88
Locus of Causality	4	27	18.20	4.26
Stability	3	20	10.06	3.80
Controllability	4	18	13.04	2.86
Maladaptive attribution	14	56	32.14	8.28
Cope1	1	9	5.06	2.32
Cope2	1	9	5.62	2.23
Cope3	1	9	6.23	1.77
Cope4	1	9	5.98	1.97
Cope5	1	9	6.32	2.09
Cope6	1	9	5.24	2.18
Cope7	1	9	5.56	2.17
Cope8	1	9	5.73	1.75
Cope9	1	9	6.89	1.64
Cope10	1	9	6.51	1.81
Cope11	2	9	6.83	1.72
Cope12	2	9	6.62	1.59
Cope13	1	9	5.75	1.95
Cope14	1	9	5.86	1.96
Cope15	1	9	6.06	1.84
Cope16	1	9	6.54	2.14
Cope17	1	9	5.62	2.39
Cope18	1	9	4.61	2.65

Cope19	1	9	5.96	2.34
Cope20	1	9	6.25	2.02
Cope21	1	9	6.10	2.56
Cope22	1	9	6.59	2.13
Cope23	1	9	5.95	2.24
Cope24	1	9	6.65	1.85
Cope25	1	9	4.88	3.03
Cope26	1	9	5.29	2.45
Cope27	1	9	6.72	2.26
Cope28	1	9	5.78	2.27
Cope29	1	9	5.24	2.75
Cope30	1	9	5.28	2.51
Cope31	1	9	4.70	2.68
Cope32	1	9	5.88	2.38
Cope33	1	9	5.85	2.17
Cope34	1	9	5.31	2.27
Cope35	1	9	5.12	2.53
Cope36	1	9	3.88	2.41
Cope37	1	9	4.44	2.39
Cope38	1	9	5.48	2.24
Cope39	1	9	4.64	2.83
Cope40	1	9	3.54	2.17
Cope41	1	9	5.29	2.46
Cope42	1	9	7.16	2.10
Emotional coping	17	105	66.05	19.19
Problem coping	37	139	95.62	17.96
Seeking social support	24	81	53.40	11.88